

ANALYSIS OF MULTIDIMENSIONAL STATE ANXIETY  
IN HORSE TRIALS

CLARE LOUISE POTTER

A thesis submitted in partial fulfillment of the requirements of Liverpool John  
Moore's University for the degree of Doctor of Philosophy

October 1996

## Abstract

The analysis of competitive state anxiety and its effect on sports performance has been undertaken by many researchers (Karteroliotis & Gill, 1987; Martens, Vealey, Burton, 1990; Jones, Swain & Hardy, 1993). This thesis focused on multidimensional competitive state anxiety and performance within the context of British Horse Society (BHS) one day horse trials. Initially, subjects (n=105) completed the Riders' Perceptions Questionnaire which was devised by the author to assess the nature of the interaction between the rider and horse during performance from the rider's perspective. Initial support for the rider and horse interaction was obtained and it was suggested that the rider's perceptions of the horse's performance must be taken into account when examining the anxiety experienced by the rider. Analysis of anxiety incorporated the Competitive State Anxiety Inventory - 2 (CSAI-2; Martens et al., 1990). Relationships between multidimensional anxiety, skill level, actual performance and perceived success were assessed. The results supported the view of multidimensional anxiety with psychological, physiological and behavioural components that change differently throughout the competition (Karteroliotis & Gill, 1987; Jones & Cale, 1989; Martens et al., 1990). Skill level was found to affect the level of anxiety experienced. Novice riders exhibited higher levels of cognitive and somatic anxiety and lower levels of self-confidence than Intermediate or Advanced riders. The effect of skill level in subsequent studies was similar in trend but the results were not significant. Within group variability was high, thus future assessment should assess anxiety levels utilising a more sensitive measure of skill level. Advanced riders were also found to perceive cognitive and somatic anxiety and self-confidence as more facilitative to performance than Intermediate or Novice riders. The assessment of the direction dimension of anxiety was particularly useful for the development of stress management programmes (Maynard, Hemmings & Warwick-Evans, 1995) and hence for the three collective case studies incorporated in the final stage of this thesis. The results provided evidence to support the current multidimensional anxiety theory within the sport of horse trials.

Antecedents and causal attributions related to anxiety were measured. Perceived readiness, self-confidence and personal control were key factors affecting the performance and combating the negative effects of anxiety. Perceived readiness predicted performance. Further analysis of antecedents more specific to horse trials may help identify predictors of CSAI-2 components. Perceived success was associated with increases in self-confidence and was a significant predictor of performance in the next phase of the horse trial. Future research is encouraged into anxiety *between* phases of a competition to assess the effect of perceived success on future anxiety levels and performance more thoroughly.

The final aim in this thesis was to assess the effectiveness of stress management intervention programmes via three collective case studies. The application of a stress management intervention programme (SMIP) was undertaken for each case study. Case study one is reported in detail whereas case studies two and three are summarised. Inter-case study comparisons were undertaken to assess the effectiveness of the SMIP. The SMIP's were effective in developing the rider's awareness of their

psychological state, increasing self-confidence and enabling riders to employ coping skills successfully during a performance. Performance improvements occurred for each subject which also corresponded with an increased level of perceived success for each subject. The three collective case studies provided initial support for the usage of SMIP's for horse trials riders and hence supported the final aim in this thesis. The research has identified competitive state anxiety within horse trials in accordance with other sports (Martens et al., 1990). It is anticipated that the information will be used to aid riding instructors understand and predict the detrimental effects of anxiety for riders. The successful usage of SMIP techniques will provide valuable assistance for riders, coaches and BHS horse trials team selectors wishing to use stress management techniques for horse trials competition.

## Acknowledgments

Thank you to my supervisors; Prof. Frank Sanderson, Prof. Tom Reilly and Dr. Pete Murphy for your support, guidance, encouragement and advice throughout my PhD work. I have learnt so much from my years in Liverpool and I am now in the position to help other students do the same.

Thank you to Simon, Mum, Dad, Mark and Kate for the support you have given me. I trust you have not become too tired of my frequent calls for advice.

Thanks to all the horse trials subjects, particularly the three case study subjects. Your interest, experience and ideas have helped me throughout the research.

## List of Contents

	<b>Page</b>
<b>Abstract .....</b>	<b>ii</b>
<b>Acknowledgments .....</b>	<b>iv</b>
<b>List of Contents .....</b>	<b>v</b>
<b>List of Figures .....</b>	<b>x</b>
<b>List of Tables .....</b>	<b>xii</b>
<b>List of Appendices .....</b>	<b>xiv</b>
<b>1.0 Introduction .....</b>	<b>1</b>
1.1 Statement of the problem .....	7
1.2 Aims .....	8
1.3 Objectives .....	8
1.4 Limitations and delimitations .....	10
<b>2.0 Review of literature - Part 1: Multidimensional anxiety theory.....</b>	<b>11</b>
2.1 Introduction.....	12
2.2 Arousal, stress and anxiety - definitions and distinction .....	12
2.2.1 Arousal.....	12
2.2.2 Stress.....	13
2.2.3 Anxiety.....	15
2.3 Multidimensional anxiety theory.....	17
2.3.1 The development of multidimensional anxiety.....	17
2.3.2 Psychological, physiological and behavioural components of state anxiety .....	18
2.3.3 Measurement of multidimensional anxiety.....	21
2.3.4 Factors affecting multidimensional competitive state anxiety.....	23
2.3.5 Temporal patterning of multidimensional competitive state anxiety .....	25
2.3.6 The direction dimension of multidimensional competitive state anxiety.....	29
2.4 Competitive state anxiety and sports performance.....	32
<b>3.0 Review of literature - Part 2: Factors associated with     multidimensional anxiety theory - antecedents of anxiety and     causal attributions .....</b>	<b>36</b>
3.1 Antecedents of multidimensional competitive state anxiety.....	37
3.2 Causal attributions, competitive state anxiety and sports performance.....	40

3.3	British Horse Society (BHS) Horse Trials.....	49
3.3.1	Competitive state anxiety and performance in BHS horse trials.....	52
3.3.2	The interaction between the rider and horse.....	53
3.4	Summary.....	60
<b>4.0</b>	<b>Review of literature - Part 3: Application of stress management on sports performance.....</b>	<b>61</b>
4.1	Introduction.....	62
4.2	Stress management programmes.....	62
4.3	Stress Management techniques.....	67
4.3.1	Goal Setting.....	67
4.3.2	Cognitive restructuring.....	72
4.3.3	Positive self-talk.....	74
4.3.4	Relaxation techniques.....	75
4.4	Multi-modal stress management intervention programmes horse trials.....	77
4.5	Collective case studies.....	77
4.6	Summary.....	82
<b>5.0</b>	<b>Investigation 1: Multidimensional state anxiety in horse trials.....</b>	<b>84</b>
5.1	Riders' Perceptions Questionnaire (RPQ) - A investigation into the horse and rider interaction - myth or reality?.....	85
5.1.1	Introduction.....	85
5.1.2	Method.....	87
5.1.3	Results.....	89
5.1.4	Discussion.....	92
5.1.5	Conclusion.....	94
5.2	Construction and administration of anxiety database questionnaire .....	95
5.2.1	Introduction.....	95
5.2.2	Method.....	96
5.2.3	Results.....	98
5.2.4	Discussion.....	103
5.2.5	Conclusion.....	108

5.3	Temporal patterning of competitive state anxiety.....	109
5.3.1	Introduction.....	109
5.3.2	Method.....	110
5.3.3	Results.....	112
5.3.4	Discussion.....	113
5.3.5	Conclusion.....	115
5.4	Effects of skill level on competitive state anxiety in horse trials	116
5.4.1	Introduction.....	116
5.4.2	Method.....	117
5.4.3	Results.....	117
5.4.4	Discussion.....	120
5.4.5	Conclusion.....	121
5.5	Multidimensional competitive state anxiety and performance of Novice, Intermediate and Advanced horse trials riders.....	122
5.5.1	Introduction.....	122
5.5.2	Method.....	124
5.5.3	Results.....	126
5.5.4	Discussion.....	133
5.5.5	Conclusion.....	139
5.6	Investigation into intensity and direction dimensions of competitive state anxiety and performance of Novice, Intermediate and Advanced horse trials riders.....	140
5.6.1	Introduction.....	140
5.6.2	Method.....	142
5.6.3	Results.....	143
5.6.4	Discussion.....	147
5.6.5	Conclusion.....	151
5.7	Summary.....	152
<b>6.0</b>	<b>Investigation 2: Antecedents of anxiety and causal attributions of performance in horse trials.....</b>	<b>155</b>
6.1	Investigation into the antecedents of anxiety in horse trials.....	156
6.1.1	Introduction.....	156
6.1.2	Method.....	158
6.1.3	Results.....	161
6.1.4	Discussion.....	165
6.1.5	Conclusion.....	170

6.2	The measurement of causal attributions by horse trials riders using the causal dimension scale (CDSII).....	171
6.2.1	Introduction.....	171
6.2.2	Method.....	173
6.2.3	Results.....	176
6.2.4	Discussion.....	181
6.2.5	Conclusion.....	186
6.3	Summary.....	186
<b>7.0</b>	<b>Investigation 3: Stress management intervention study - design, application and assessment of stress management techniques on the performance of horse trials riders.....</b>	<b>188</b>
7.1	The stress management intervention programme.....	191
7.1.1	Design.....	191
7.1.2	Baseline assessment.....	194
7.1.3	Development, content and application of the stress management intervention programme.....	209
7.1.4	Evaluation.....	212
7.2	Case study 1.....	214
7.2.1	Introduction.....	214
7.2.2	Subject Information.....	215
7.2.3	Results.....	226
7.2.4	Discussion.....	238
7.2.5	Conclusion.....	246
7.3	Case study 2.....	247
7.3.1	Introduction.....	247
7.3.2	Subject Information.....	247
7.3.3	Results.....	249
7.3.4	Discussion.....	253
7.3.5	Conclusion.....	255
7.4	Case study 3.....	257
7.4.1	Introduction.....	257
7.4.2	Subject Information.....	257
7.4.3	Results.....	260
7.4.4	Discussion.....	264
7.4.5	Conclusion.....	267

7.5	Inter - Case study comparisons.....	268
7.5.1	Introduction.....	268
7.5.2	Method.....	268
7.5.3	Results.....	270
7.5.4	Discussion.....	276
7.5.5	Conclusion.....	282
7.6	Summary.....	282
<b>8.0</b>	<b>Synthesis of investigations: Multidimensional state anxiety in horse trials and the implications of stress management techniques on riders.....</b>	<b>285</b>
8.1	Research findings.....	286
8.1.1	Multidimensional state anxiety.....	286
8.1.2	Stress management programmes for riders.....	290
8.2	Application of findings to BHS horse trials.....	292
8.3	Developmental research areas.....	292
<b>9.0</b>	<b>Conclusions and recommendations.....</b>	<b>295</b>
<b>10.0</b>	<b>References.....</b>	<b>298</b>
<b>11.0</b>	<b>Publications and Communications.....</b>	<b>315</b>
<b>Appendices</b>		

## List of Figures

	Page
2.2.1 Process of the stress reaction- adapted from Spielberger (1989, p.4).	15
2.3.1 The negative thought anxiety cycle - adapted from Ziegler (1980)	20
2.3.2 The temporal patterning of cognitive and somatic anxiety prior to, during and after competition.	27
2.3.3 The macro and micro cycles of the temporal patterning of multidimensional competitive state anxiety in sports with multiple phases.	29
3.2.1 Weiner's (1972) classification of the four causal attribution factors.	42
3.2.2 The influence of outcome and locus of causality on affect. From Cox (1990, p. 237) Sport Psychology - concepts and applications.	48
3.3.1 The model illustrating the dynamic interaction between the horse and rider	56
3.3.2 The negative performance cycle.	59
4.3.1 The structure of a goal setting programme showing short, intermediate and long term goals.	71
5.1.1 The mean score for rider and horse interaction (factor 1) with standard deviation bars for the Novice, Intermediate and Advanced riders.	91
5.1.2 The percentage number of riders reporting the presence of the horse behaviour when the horse was tense.	92
5.2.1 The percentage of riders experiencing somatic anxiety symptoms.	101
5.2.2 The percentage number of riders who used mental rehearsal prior to the dressage, show-jumping and cross-country phases.	102
5.3.1 The temporal changes in mean CSAI-2 components with standard deviation bars for horse trials riders.	113
5.4.1 The mean CSAI-2 cognitive anxiety scores with standard error bars for Novice, Intermediate and Advanced riders prior to, during and after the horse trial.	118
5.4.2 The mean CSAI-2 somatic anxiety scores with standard error bars for Novice, Intermediate, Advanced riders.	119
5.4.3 The mean CSAI-2 self-confidence scores with standard error bars for Novice, Intermediate and Advanced riders.	120
5.5.1 The change in mean CSAI-2 somatic anxiety scores, with standard error bars, for the whole sample throughout the phases of the horse trial.	129
5.5.2 The mean CSAI-2 self-confidence scores with standard error bars for the whole sample throughout the phases of the horse trial.	130
5.6.1 The mean CSAI-2 cognitive anxiety direction scores with standard error bars for the whole sample for the competition phases of the horse trial.	146
5.6.2 The mean CSAI-2 somatic anxiety direction scores with error bars for the competition phases of the horse trial for the whole sample.	146
5.6.3 The mean CSAI-2 self-confidence direction scores with error bars for the competition phases between the Novice, intermediate and Advanced groups.	147
6.1.1 The mean score for the PEQ factor, coach's influence for the riders who perceived cognitive anxiety as facilitative and debilitating.	163

6.1.2	The differences in mean perceived readiness scores between the good and poor performance groups.	164
6.2.1	The means and standard deviations for the CDSII external control and stability scores for the Novice, Intermediate and Advanced horse trials riders.	178
6.2.2	The means and standard deviation scores for CDSII personal control for the low, moderate and high perceived success groups.	180
7.1.1	The macro and micro temporal patterning of anxiety in horse trials competitions.	198
7.1.2	Organisation chart showing the first order 'Rider factors' and the second order factors for subject 1 from the qualitative data analysis of the pre-intervention study interview.	205
7.2.1	Performance profile for subject 1 showing the rating of constructs prior to the stress management intervention programme (1/2/95).	218
7.2.2	Second order categories identified from the first order: Rider factors for subject 1.	219
7.2.3	The temporal patterning of intensity scores for CSAI-2 components for subject 1 prior to the implementation of the SMIP.	222
7.2.4	The temporal patterning of MRF scores for subject 1 prior to the implementation of the SMIP.	223
7.2.5	The performance profile for subject 1 after the SMIP showing the change in the subject's perception of the constructs.	228
7.2.6	Second order categories identified from first order factor: Rider factors for subject 1 post SMIP.	227
7.2.7	Intensity scores for CSAI-2 cognitive anxiety (CA) for subject 1, prior to and after the SMIP.	230
7.2.7	Intensity scores for CSAI-2 cognitive anxiety (CA) for subject 1 in the competition phases of the horse trial in the pre- and post SMIP conditions.	231
7.2.8	Intensity scores for CSAI-2 somatic anxiety (SA) for subject 1 in the pre-competition phases, prior to and post SMIP.	232
7.2.8	Intensity score for CSAI-2 somatic anxiety (SA) for subject 1 during the competition phases both pre- and post SMIP.	232
7.2.9	Intensity scores for CSAI-2 self-confidence (SC) during the pre-competition phase for subject 1 prior to and post SMIP.	233
7.2.9	Intensity scores for CSAI-2 self-confidence (SC) for subject 1 during the competition, both prior to and after the SMIP.	233
7.3.1	Intensity scores for CSAI-2 components for subject 2 prior to and after the SMIP.	250
7.4.1	Intensity scores for CSAI-2 components for subject 3 prior to and after the SMIP.	261
7.5.1	The percentage of performance profile constructs improved in the post SMIP condition for each subject in the collective case studies design.	272
7.5.2	The changes in percentage number of negative and positive statements in the pre-and post SMIP interview analysis for subjects 1,2 and 3 in the collective case studies design.	273

## List of Tables

	Page	
5.1.1	Factor loadings after principal components analysis with varimax rotation	90
5.3.1	The means and standard deviations for the CSAI-2 components prior to, during and after the competition.	112
5.5.1	Intercorrelations between CSAI-2 components scores for Novice, Intermediate, Advanced riders.	127
5.5.2	Means and standard deviations for CSAI-2 components prior to each phase of the horse trial for the Novice, Intermediate and Advanced riders	128
5.5.3	The means and standard deviations between the Novice, Intermediate and Advanced groups for the performance scores in the phases of the horse trial.	131
5.6.1	Intercorrelations between CSAI-2 component scores.	144
5.6.2	The means and standard deviations for the intensity and direction scores for CSAI-2 components between Novice, Intermediate and Advanced groups.	145
6.1.1	The mean and standard deviations scores for the antecedent questionnaire items and the CSAI-2 components from the present study and from Jones et al. (1990).	161
6.1.2	Stepwise multiple regression summary; significant predictors of total performance score.	165
6.2.1	Means and standard deviations for the CDSII components for all subjects in the present study and those obtained in McAuley (1991).	177
6.2.2	Means and standard deviations for all the riders for the CSAI-2 components and from Martens et al. (1990).	177
7.1.1	The stress management intervention programme implemented with each subject.	211
7.2.1	Scores on the SAS for subject 1.	216
7.2.2	CDSII component scores for subject 1 prior to the implementation of the SMIP.	224
7.2.3	Content of the SMIP for subject 1.	225
7.2.4	MRF scores for subject 1 in the pre and post SMIP competitions.	234
7.2.5	The direction scores of the CSAI-2 components for subject 1 prior to and after the SMIP.	234
7.2.6	Actual performance scores for subject 1 during the phases of the horse trial both pre- and post-SMIP competitions.	236
7.2.7	Goals set and evaluation of goal achievement for the pre and post SMIP competitions by subject 1.	237
7.3.1	Content of the SMIP for the subject 2.	249
7.3.2	The direction scores of the CSAI-2 components for subject 2 prior to and after the SMIP.	251
7.3.3	Actual performance scores for subject 2 during the phases of the horse trial for both pre- and post SMIP competitions.	252
7.4.1	Content of the SMIP for subject 3.	259
7.4.2	Direction scores for CSAI-2 components for subject 3 in the pre- and	262

	post-SMIP condition	
<b>7.4.3</b>	Actual performance scores for subject 3 during the phases of the horse trial for both pre- and post SMIP competitions	262
<b>7.5.1</b>	The percentage change in the CSAI-2 components in the post SMIP condition for each subject in the collective case studies design.	274
<b>7.5.2</b>	The changes in the actual penalty score for the horse trial between the pre- and post SMIP competition assessment for each subject in the collective case studies design.	275
<b>7.5.3</b>	The perceived success of the horse trial for all subjects in the pre- and post SMIP competitions	276

## List of Appendices

		Page
<b>Appendix I</b>	Rider's Perceptions Questionnaire	I
<b>Appendix II</b>	Database Questionnaire	II
<b>Appendix III</b>	Competitive State Anxiety Inventory - 2 (CSAI-2, Martens et al., 1990)	III
<b>Appendix IV</b>	Questionnaire Booklet for Section 5.5 and 5.6	IV
<b>Appendix V</b>	Pre-Event Questionnaire (PEQ)	V
<b>Appendix VI</b>	Causal Dimension Scale II (CDSII; McAuley et al., 1992)	VI
<b>Appendix VII</b>	Instructions to reduce Social Desirability for Questionnaires (Martens et al., 1990)	VII
<b>Appendix VIII</b>	Sport Anxiety Scale (SAS; Smith, Smoll & Schutz, 1990)	VIII
<b>Appendix IX</b>	SMIP Semi-structured interview schedule	IX
<b>Appendix X</b>	Pre-SMIP study assessment booklet	X
<b>Appendix XI</b>	Interview analysis - subject 1, Pre-SMIP	XI

## CHAPTER 1

### Introduction

## 1.0 Introduction

Coaches, athletes and sport psychologists are becoming increasingly aware of the importance of the athlete's mental state during training and competition. The importance of the psychological component is reflected in the increasing attention it is receiving in the research literature (McAuley, Duncan & Russell, 1992; Maynard & Cotton, 1993; Gill, 1994; Jones, 1995) and in the practical application of psychology to sport (Kirschenbaum, McCann, Meyers & Williams, 1995).

Williams (1995) suggested that 20 years ago most elite athletes gave little or no thought to the mental preparation side of their sport. The athletes and coaches knowledge of sport psychology has increased dramatically since that time and the increase in the usage of sport psychology has occurred in many countries, for example the former Soviet Union and the former East Germany (Meyers, 1995). In Great Britain, the expansion of sport psychology, both in the research and applied disciplines, has paralleled the increase in other nations such as United States of America, Australia, Germany and the countries of the former Soviet Union. A vast amount of research literature has been published (Mace & Carroll, 1985; Hardy, 1990; Jones, 1991; Jones & Swain, 1992; Maynard & Cotton, 1993) and approximately 50 sport and exercise psychologists are accredited to the British Association of Sport and Exercise Sciences. These sport and exercise psychologists are currently working with athletes in a wide range of sports, for example; canoe slalom, table tennis, rugby, archery, gymnastics and orienteering (BASES, 1995).

One particular area of sport psychology which has received a vast amount of attention is competitive anxiety and its effect on performance. With increased commercialisation, sponsorship and media coverage, increasing pressure is placed on athletes to go faster, jump higher and be stronger. It is not unusual for athletes to become nervous prior to competition and as a result they may perform below their capability. Other athletes, however, can 'rise to the occasion' and produce winning performances in competition. What causes these differences to occur? It is suggested that the difference between

these athletes may be the level of anxiety they experience and, more importantly, their perception of the anxiety as facilitative or debilitating to their performance (Alpert & Haber, 1960; Jones & Swain, 1992).

The 'anxiety phenomenon' has resulted in much psychological research since the 1950's (Martens, 1971) and through its development, the research areas have expanded into different branches of psychology; general anxiety (Spielberger, 1971) academic and test anxiety (Sarason, 1975) and sport competition anxiety (Martens, 1971). The research into sport competition anxiety has resulted in the current view of anxiety as a multidimensional construct (Borkovec, 1976).

Multidimensional competitive anxiety research has examined the antecedents of competitive anxiety (Jones, Swain & Cale, 1990), the relationship between psychological and physiological components of competitive anxiety (Caruso, Dzewaltowski, Gill & McElroy, 1990), the temporal patterning of competitive anxiety (Karteroliotis & Gill, 1987), the examination of intensity and direction dimensions of competitive anxiety (Jones, Swain & Hardy, 1993) and the frequency dimension of competitive anxiety (Swain & Jones, 1993).

Competitive anxiety researchers have focused on motor tasks performed in the laboratory (Karteroliotis & Gill, 1987) and also in sports including; middle distance runners (Jones et al., 1990); pistol shooting performance (Gould, Petlichkoff, Simons & Vevera, 1987); swimmers (Burton, 1988); baseball and softball (Albrecht & Feltz, 1987); athletics (Jones & Cale, 1989); rugby (Maynard & Howe, 1987) and volleyball (Crocker, Alderman & Smith, 1988). Researchers have indicated the need for further research into competitive anxiety in other sports (Yan Lan & Gill, 1984) to develop our understanding of competitive anxiety in a variety of sports. Specifically, are the competitive anxiety experiences of athletes in different sports the same? Consequently, the research in this thesis utilises the anxiety literature to date and applies these findings to equestrian sports, specifically, British Horse Society (BHS) horse trials.

Researchers have previously investigated anxiety in sports which incorporate one competition. It has been acknowledged that state anxiety can drop significantly after the onset of the competition and thus state anxiety fluctuates substantially throughout the competition (Martens, Vealey and Burton, 1990). Competitive anxiety has not thoroughly been examined *during* competitions due to practical problems associated with data collection. Martens et al. (1990) specifically highlighted the need to seek or create competitive settings in which anxiety can be measured during the contest. Such an analysis would obtain a better understanding of the effect of anxiety on performance.

Horse trials provide an ideal opportunity for the analysis of competitive state anxiety *during* competition as it incorporates three separate phases within the competition which contribute to the total performance of the rider and horse. Consequently, the analysis of relationship between performance expectations, actual performance and perceived success in relation to competitive state anxiety can be undertaken. This provides valuable information regarding the role of cognitive appraisal in the anxiety process (Gill, 1994). Further aspects which require more thorough investigation include the antecedents of anxiety, the temporal patterning of anxiety and the perception of anxiety as facilitative or debilitating to performance. The research in this thesis addresses those needs within the context of BHS horse trials.

A unique approach of this research is the additional variable of the horse. The relationship between rider and horse can be compared to that of two human athletes partnering each other in sports such as coxless rowing pairs, badminton doubles, tennis doubles, figure skating, rally driving and bobsleigh. The performance depends on the performance of each individual athlete and the interaction between these two athletes. Their relationship must encompass complete trust, respect and harmony if they are to produce their best performance. Coles (1987, p. 20) acknowledged the importance of both rider and horse and stated that,

“...in horse sports we are combining the abilities of two athletes - the horse and the rider. Both must be prepared.”

The rider and horse interact to produce one total performance. Knox (1989) suggested that the interaction between the rider and horse is dynamic and subject to subtle nuances, an interaction which is similar to the interaction between two humans.

It is important, however, to develop a deeper understanding of the relationship and interaction between rider and horse in order to analyse the performance of the 'system' (performance of rider and horse together). Relatively little research exists in the area of horse and human interaction, however, the human-animal interaction and horse behaviour and psychology have been researched (Kiley-Worthington, 1987; Williams, 1991; Rifá, 1990; McCann, Heird, Bell & Lutherer, 1988; Fox & Mickley, 1984; Blackshaw, Kirk & Cregier, 1983).

Based on observations of horses, and a knowledge of the instincts of horses, it has been concluded that horses experience physiological arousal via the activation of the sympathetic division of the autonomic nervous system on perception and appraisal of a threatening or dangerous situation. They exhibit the fight or flight mechanism which is characteristic to all animals (Fraser, 1992; Rees, 1984). The horse's ability to appraise a situation as threatening is based on the environmental cues, past experience and stimuli from other horses or humans; namely, changes in behaviour, body posture, sweat, muscle tone and verbal communication.

Empirical and anecdotal evidence indicates that changes in the riders body position, muscle tone, voice commands and physiological changes are sufficient to elicit nervousness, fear or excitement in the horse (Lockhart, 1990). The emotions experienced by the horse are then evidenced by the behaviour and physiological changes in the situation; for example; avoidance, tension, sweating. This behaviour is directly opposite to the behaviour required by the rider for a good performance in horse trials. Consequently, the performance of the 'system' has decreased due to the interaction of the horse and rider. The research in this thesis aims to provide further empirical support for the interaction between the rider and horse and subsequently

enable the development of coping skills directly aimed at relieving the negative effects of the rider and horse interaction.

The usage of sport psychology and mental training in equestrian sports is small at present. The Australian equestrian teams were supported by a sport psychologist at the 1992 Barcelona Olympic Games, where they performed to a high standard. The awareness of sport psychology as a tool for enhancing performance in equestrian sports is developing in Great Britain. This is supported by the increased amount of sport psychology literature available to riders and trainers (Houghton-Brown, 1995; Hölzel, 1996).

Whilst analysing the effects of competitive state anxiety on the performance of athletes, it is important to analyse the effect of anxiety in different groups of athletes. For example, researchers attempt to establish whether there are differences between highly skilled and successful elite athletes and less skilled, novice athletes. The results can highlight whether particular strategies displayed by experts, can be adopted by novices to reduce the effects of anxiety. It is also important to remember the individual differences in anxiety reactions experienced by different athletes. Some athletes might experience predominantly physiological effects of anxiety such as increased muscle tension and heart rate, whereas others may experience predominantly cognitive effects of anxiety such as worry, self-doubt and a lack of concentration. Athletes also cope with the anxiety they experience in different ways. Spielberger (1989) and Lazarus (1966; 1990) advocated the importance of the individual in the anxiety reaction process. Specifically, the anxiety reaction experienced is dependent on the individual's perception and cognitive appraisal of the threat of a given situation. Gill (1994) consequently emphasised the need for an individual approach to research in competitive anxiety.

“Stress is an individual process; coping with stress is an individual process; and sport and exercise psychologists should focus on individual characteristics and preferences rather than applying universal strategies for all”.  
(p. 25)

The holistic and individual approach to competitive anxiety and performance allows the researcher to suggest strategies which aim specifically to optimise the mental state and performance of an athlete (Bull, 1991b). The formation of individualised stress management programmes enables the practical application of anxiety theory to the benefit of riders in this research. The aims of the stress management intervention programme (SMIP) are to develop the coping skills of riders and train mental training techniques to enhance performance in competition. The work provides information regarding the possible usage of SMIP's for riders in the future.

In summary, the rider will attempt to optimise the performance of the 'system' through extensive training and building of partnerships between themselves and the horse. This will work in the majority of cases. However, in some cases the horse's performance or the rider's performance will be below standard. The analysis of anxiety and its associated factors within horse trials enables the researcher and readers of the material to understand better the effect of anxiety on the interaction between the rider and the horse, the performance of the rider and the performance of the 'system'. By assessing the effectiveness of stress management techniques through an individualised stress management intervention programme, recommendations for their future usage within equestrian sports can be made. The underlying principle of the research in this thesis is the idea of enabling the rider to prepare actively for and cope with problems associated with the horse and the competition. Consequently, the rider is controlling one half of the performance system and coping with the other.

### 1.1 Statement of the problem

The research sets out to analyse multidimensional competitive state anxiety within the sport of horse trials. This thesis follows the current anxiety research, however, extends the knowledge of anxiety into a new sporting domain. The associated factors of anxiety are investigated to ascertain the specific antecedents of anxiety for horse trials riders and their reactions to performance through causal attributions. With this information, the practical application of stress-reducing techniques are assessed with

the recommendations as to their usage by future riders for preparation and performance during competition.

## 1.2 Aims

- 1) To analyse multidimensional competitive state anxiety and its effect on riders' performance in British Horse Society (BHS) horse trials.
- 2) To investigate factors associated with multidimensional competitive state anxiety and their relationship to BHS horse trials riders' performance.
- 3) To design and implement individualised stress management intervention programmes and assess their effectiveness on psychological variables and the performance of BHS horse trials riders.

## 1.3 Objectives

- 1) To investigate the interaction between rider and horse and develop a psychometric test to assess the intensity of this interaction. This study incorporates antecedents of anxiety and multidimensional competitive state anxiety.
- 2) To provide empirical evidence for the interaction between rider and horse with particular emphasis on the effect of multidimensional competitive state anxiety on the performance of the rider, the subsequent interaction with the horse and the consequent performance of the 'system'.
- 3) To investigate the prevalence of multidimensional competitive state anxiety and related constructs in BHS horse trials via a database questionnaire.
- 4) To evaluate the temporal patterning of multidimensional competitive state anxiety in horse trials using the CSAI-2. The temporal patterning of anxiety is also examined between different skill levels of riders.

- 5) To examine the relationship between multidimensional competitive state anxiety and horse trials performance for Novice, Intermediate and Advanced horse trials riders using the CSAI-2. The relationship between anxiety and performance between the phases of the horse trial is also examined.
- 6) To investigate riders' perceptions of multidimensional competitive state anxiety as facilitative or debilitating to horse trials performance using the modified version of the CSAI-2.
- 7) To examine the antecedents of multidimensional competitive state anxiety reported by Novice, Intermediate and Advanced riders using qualitative and quantitative data collection methods.
- 8) To investigate the causal attributions for performance of Novice, Intermediate and Advanced riders using the CDSII scale.
- 9) To design and implement a stress management intervention programme for three riders based on the information obtained in investigations one and two. The effect on riders' performance, perceptions of anxiety and self-confidence and the interaction with the horse is examined.
- 10) To assess the effectiveness of the SMIP by comparison between the three case studies.
- 11) To make recommendations for the use of stress management intervention programmes in BHS horse trials.

## 1.4 Limitations and delimitations

### *Limitations*

- 1) The assessment of the interaction between the rider and horse was limited. The researchers ability to investigate the psychology of the riders was greater than for the horse. All references to the horse psychology were inferred through the horse behaviour.
- 2) Due to the small number of competitions, anxiety and performance was not measured between each stress management intervention technique. Consequently, data prior to and after the whole SMIP package was obtained. Conclusions regarding the effectiveness of a single technique was not analysed in this research.
- 3) Administration of the Competitive State Anxiety Inventory - 2 (CSAI-2) was restricted to half an hour before each phase of the competition to minimise the disruption to the riders' pre-competition routines.

### *Delimitations*

- 1) The field research was restricted to the competitions affiliated to the British Horse Society Horse Trials Group.
- 2) The sport under investigation was restricted to horse trials because this enabled the measurement of anxiety levels between phases. Horse trials is the main Equestrian sport which encompasses multiple phases.
- 3) The multiple baseline design was limited to three case study subjects to ensure the experimental protocol was practical to administer.

## CHAPTER 2

Review of literature - Part 1: Multidimensional anxiety theory

## **2.0 Review of literature - Part 1: Multidimensional anxiety theory.**

### 2.1 Introduction

The psychological concepts of anxiety and stress are pervasive in modern life and in sport. Anxiety in sport has developed into a popular academic area of study (Jones, 1991b). Sport provides an ideal opportunity to assess human behaviour and human emotions and the assessment of anxiety experienced by the athlete, due to its competitive nature. High levels of anxiety may be perceived as negative and thus produce detrimental effects on subsequent sports performance (Rushall, 1979). This research assesses multidimensional competitive state anxiety, however, it is important to understand the concepts of arousal, stress and anxiety as all are closely related.

### 2.2 Arousal, stress and anxiety - definitions and distinctions

#### *2.2.1 Arousal*

Sports psychologists have researched the area of arousal and pre-competition with particular interest in the increase in arousal as a function of anticipated performance (Morris & Liebert, 1970; Landers, 1982). Arousal is a general term regarding the intensity of alertness and readiness of an organism. It can vary on a continuum from extremely low levels (sleep) to extremely high levels (excitement) (Weinberg, 1989). Cannon (1929) cited by Weinberg (1989) identified arousal as energy mobilisation during threatening situations and was thought necessary for the fight or flight mechanism.

Arousal thus refers to the energy mobilisation associated with the activation of the sympathetic division of the autonomic nervous system (ANS) and results in physiological changes in the body including; increased heart rate, blood pressure and muscle tension, rapid shallow breathing, pupil dilation and increased perspiration. The activation of the sympathetic division of the ANS is preceded by the activity in the ascending reticular activating system (ARAS) which is stimulated by visual, auditory

and proprioceptive stimuli (Malmo, 1959; Cox, 1990). The result is that the individual is ready for activity and the 'fight or flight mechanism' is initiated.

Duffy (1962) suggested that arousal and activation refer to different responses within an individual. Activation is deemed to be energy mobilisation without any overt physical activity, whereas, arousal is the energy mobilisation with the presence of overt physical activity. Both activation and arousal involve the same physiological responses in the body. An illustration of the separate terms can clearly be shown in a sporting context. In horse trials, prior to the cross-country phase, the horse and rider are given a one minute countdown, where they are stand in "the start box" awaiting start. At this point the rider experiences heightened activation yet no overt activity occurs. Once riding the cross-country, the rider will have a high level of physiological arousal associated with the galloping and jumping positions required of the rider as well as preparation of the horse in the last strides prior to the fence. This thesis refers more often to the concept of anxiety within horse trials. However, it is important to understand fully the meaning of the terms arousal and activation as they are closely related to the somatic anxiety component of multidimensional anxiety (see Section 2.3.1).

### *2.2.2 Stress*

Stress is a very broad term and has a wide range of meanings within different disciplines of study. It is used in the physical, life and psychological sciences. Stress has been defined as "a non-specific response of the body to any demand placed upon it" (Selye, 1975). Psychological stress refers to any perceived demand placed on the cognition, information processing capacities and emotional aspects of an individual. Extending this concept, psychological stress refers to a relationship between the person and the environment where the demands exceed the person's resources in that situation (Lazarus, 1990). For example, continually placing an inexperienced athlete in competitions of too high a standard will result in the athlete experiencing psychological stress.

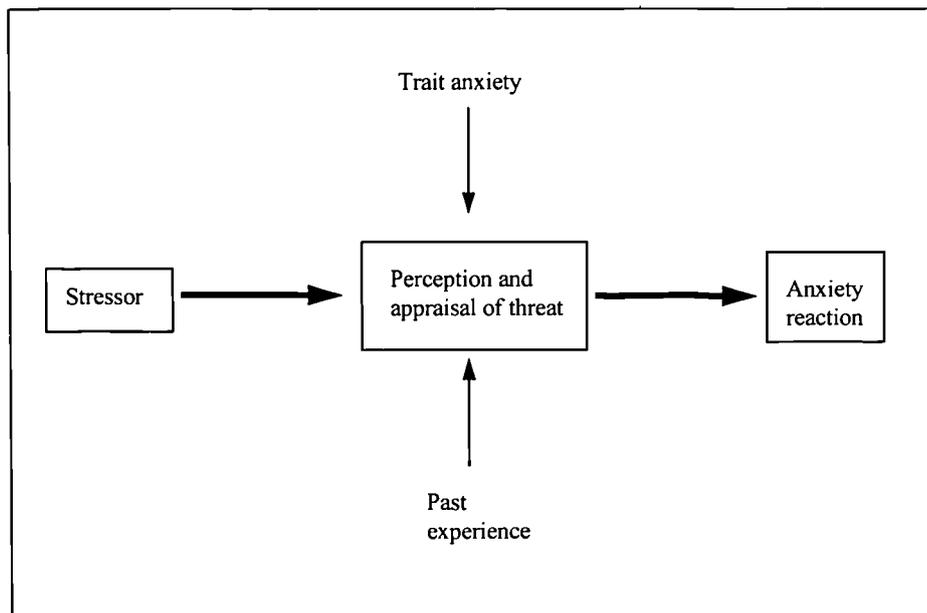
There are many sources of stress placed on an individual. Stressors include examinations in education, work and retirement. With particular reference to sport, Suinn (1980) postulated two major areas of stressors, firstly external stressors, which may range from the appearance of a particular opponent, unexpected weather or course conditions, to the sight of the starting gate and a bad call by a referee. The second major area involves internal stressors, such as, being aware of bodily signs of fatigue, thoughts, appraisals and perceptions of competition and concluding that a game is lost. The area of stressors and how individuals experience stress has received considerable attention in the Sport Psychology literature within the concept of antecedents of anxiety (Gould, Petlichkoff & Weinberg, 1984; Jones, Swain & Cale, 1990,1991) (see section 3.1).

#### *Eustress and distress*

Certain individuals may experience stress as having detrimental effects on their performance. In certain sports, however, the stress associated with the sport is perceived as pleasurable (positive stress) by many individuals. Such sports may include parachuting, hang-gliding and rock-climbing. Selye (1975) distinguished between negative stress or distress and positive stress or eustress. Distress is experienced by individuals as unpleasant and damaging. In contrast, eustress is experienced as pleasant and satisfying and is sought after by individuals (sensation-seekers).

The psychological stress an individual experiences is also dependent on his/her perception and evaluation of the stressor. Spielberger (1989) stated that psychological stress is a complex psychobiological process consisting of three major elements. Firstly, the individual is subjected to a stressor. The individual's perception and evaluation of the stressor occurs and if it is perceived as threatening, an anxiety reaction is evoked (Figure 2.2.1). Lazarus (1966; 1990) emphasised the individual's appraisal of the situation in the transactional theory of the stress process. Lazarus (1990) identified that once a person has appraised a situation as threatening and stressful, coping processes are initiated. Both Spielberger (1989) and Lazarus (1966; 1990) emphasised the Interactionist view that stress is a constantly changing process of the person within the environment.

The determining factor as to whether stress is experienced as eustress or distress is the individual's perception and appraisal of the situation. This is dependent on the individual's past experience in such situations and their trait anxiety disposition (see Section 2.2.3). Anxiety is viewed as the manifestation of stress and it is concluded by Spielberger (1989), that anxiety is evoked if the situation is perceived as threatening irrespective of the presence of any real objective danger (Figure 2.2.1).



**Figure 2.2.1:** Process of stress reaction - adapted from Spielberger, (1989, p.4).

### 2.2.3 Anxiety

Anxiety is recognised as a pervasive phenomenon throughout life and in specific areas such as sport and has received much attention in both psychology and sport psychology (Morris & Liebert, 1970; Spielberger & Sarason, 1975; Borkovec et al., 1976; Krane & Williams, 1987; Parfitt et al., 1990; Hardy & Jones, 1990). Spielberger (1975) emphasised the importance of anxiety as a fundamental human emotion and suggested anxiety may be regarded as a basic condition of human existence.

Anxiety is generally considered as the higher arousal states which produce feelings of discomfort and worry (Weinberg, 1989) and is accompanied by heightened physiological arousal (Levitt, 1980). Within a sporting context, athletes frequently experience the negative effects of anxiety. Sarason (1975) suggested that anxiety reflects a person's concerns about being evaluated where a consistently anxious person is preoccupied with 'me'. Sports involve evaluation of the athlete's performance. This may be in the form of quantitative assessment such as scores or results or qualitative, subjective interpretation, such as spectators' views, judges' comments and criticisms in the newspapers. All will cause the athlete concern. The accompanying physiological arousal indicates that anxiety is linked with the fight or flight mechanism.

The production of anxiety is dependent on the individual's appraisal of the stressor as threatening. Spielberger (1989) suggested that the perception of threat encompassed two characteristics. Firstly, it is future orientated and involves anticipation of a harmful event that has not yet happened and secondly, it is mediated by complex mental processes of the appraisal process; perception, thought, memory and judgement. Anxiety serves as an internal reaction, or signal, to prepare the body for action and occurs when no objective threat or danger is present only the individual's perception of physical or ego threat. Spielberger (1989) also indicated that anxiety reactions may be mediated by the recall of past situations which are perceived as threatening.

Anxiety may be perceived to have positive and negative effects (Alpert & Haber, 1960). In some cases it is a motivational force, driving an individual to action. The individual's interpretation of the situation is again the determining factor as to whether anxiety is experienced as pleasant and facilitative or unpleasant and debilitating. Cooke (1986) emphasised the importance of individuality when analysing anxiety and suggested that it should always be defined by an Interactionist approach in terms of the individual in relation to his/her situation.

Extensive research into anxiety has led to the development of multidimensional anxiety theory (Liebert & Morris, 1967; Borkovec, 1976). Section 2.3 reports the development and definitions of anxiety from a unidimensional to multidimensional construct. It also explains the nature and temporal patterning of the competitive state anxiety response.

## 2.3 Multidimensional anxiety theory

### 2.3.1 *The development of multidimensional anxiety*

Spielberger (1966) recognised the complex nature of human anxiety and identified trait and state anxiety (A-Trait and A-State respectively). A-Trait or chronic anxiety refers to the predisposition of habitual anxiety proneness of an individual. It is defined as,

“a motive or acquired behavioural disposition that predisposes an individual to perceive a wide range of objectively nondangerous circumstances as threatening and to respond to these with state anxiety reactions disproportionate in intensity to the magnitude of the objective danger.”

Spielberger (1966, p.17)

This definition highlights the importance of the individual's perception of the threat contained in the situation and its resultant effect on the anxiety reaction evoked. A-State (or acute anxiety) refers to the specific, transient feelings of an individual in a given circumstance. This term relates to how an athlete feels at a particular time, for example, prior to competition. Spielberger (1966) defined state anxiety as,

“subjective, consciously perceive feelings of apprehension and tension, accompanied by or associated with activation or arousal of the autonomic nervous system”

(p.17)

Spielberger (1971) emphasised that state anxiety is an emotional reaction that is evoked when the individual perceives a particular situation as personally dangerous or threatening, irrespective of the any real danger being present. Individuals who are high in trait anxiety perceive more situations as threatening; experiencing state anxiety

reactions more frequently and with greater intensity than individuals who are low in trait anxiety (Spielberger, 1989).

Liebert and Morris (1967) identified two major components of anxiety; namely 'worry' and 'emotionality'. The worry dimension was defined as cognitions or thoughts about one's performance. Emotionality was defined as autonomic or physiological reactions to the stress of the situation. This distinction arose from inconsistencies in previous research resulting from the oversimplified unidimensional view of anxiety as having simply trait and state components (Krane and Williams, 1987). Davidson and Schwartz (1976) also proposed the existence of two components of anxiety and labelled them cognitive and somatic anxiety. These terms relate to Liebert and Morris's (1967), components of anxiety. Specifically, the cognitive anxiety component is comparable to 'worry' and the somatic anxiety component is comparable to 'emotionality'.

Borkovec (1976) proposed a model incorporating three separate yet interacting components; physiological, cognitive and overt behavioural, in response to external and internal fear cues. In subsequent research anxiety is now viewed as a multidimensional construct involving three separate yet interacting components (Borkovec, Weerts and Bernstein, 1977; Karteroliotis and Gill, 1987; Caruso et al., 1990).

### *2.3.2 Psychological, physiological and behavioural components of state anxiety*

Both trait and state anxiety are viewed as a multidimensional construct involving three components; psychological (cognitive effects of worry), physiological (somatic anxiety) and behavioural (restlessness, trembling) (Borkovec, 1976; Caruso et al., 1990).

The psychological component of state anxiety is characterised by the cognitive aspects of anxiety including; anxious negative expectations, lack of self-confidence and disrupted attention. Borkovec et al. (1977) indicated that the psychological component was the subjective or self-report channel of anxiety. Morris, Davis and Hutchings (1981, p. 541) defined cognitive anxiety as negative expectations but also, cognitive

concerns about oneself, the situation in hand and potential consequences. In a sporting context, cognitive anxiety is exhibited by an individual in competition as negative performance expectations and negative self-evaluation possibly resulting in inferior performance.

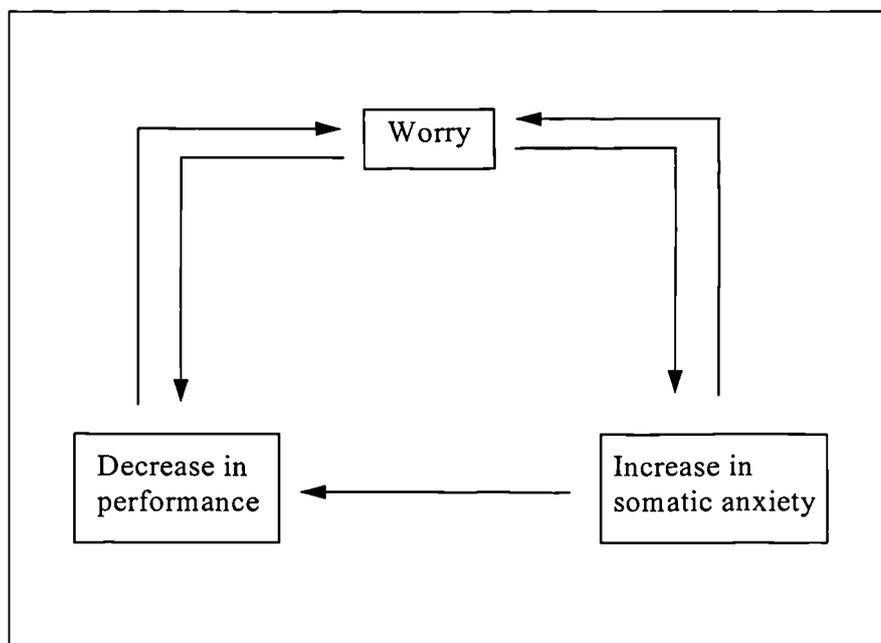
Physiological arousal refers to the physiological changes in the body. It involves initiation of the sympathetic division of the autonomic nervous system and includes such responses as rapid heart rate, increased blood pressure, increased muscle tension, shortness of breath, clammy hands and butterflies in the stomach (Borkovec et al., 1977). Somatic anxiety is the term commonly used in competitive state anxiety research and refers to the individual perception and interpretation of the physiological arousal accompanying the state anxiety response (Karteroliotis & Gill, 1987).

The behavioural component is complex and ambiguous. The reason for this ambiguity is the difficulty in drawing conclusions about anxiety levels from isolated behaviour. Hackfort and Schwenkmezger (1989) suggested that observation of behaviour is problematic because one cannot really distinguish between anxious behaviour and coping behaviour. It is important for a situation to provide an interpretative background so that behaviour can be adequately assessed and understood. Hence research will incorporate observation methods in conjunction with other data and self-statements from athletes to obtain meaningful information about the state anxiety response.

Lacey (1959) stated that the components of anxiety do not correlate well with each other thus indicating individual response patterns of anxiety and the complexity and multidimensional character of the anxiety construct. The distinction between the components is based on this correlational evidence between components and evidence of different antecedents of cognitive and somatic anxiety (Martens et al., 1990). A person may exhibit strong reactions in only one of two components of multidimensional anxiety, they may experience predominantly cognitive A-state or somatic A-state (Martens et al., 1990; Hardy & Jones, 1990). This has implications for the maintenance

and reduction of anxiety (Borkovec et al., 1977). Borkovec et al. (1977) also suggested that individuals differ in the physiological symptoms of anxiety. Some people will respond with increased heart rate whereas others will respond with facial blushing or increased sweating.

Although the components of state anxiety have been found to correlate with each other only moderately, interaction between the components does exist. Cognitive and somatic anxiety interact; cognitive anxiety may elicit somatic anxiety symptoms and somatic anxiety may elicit cognitive anxiety symptoms. Specifically, an athlete may exhibit cognitive anxiety and, as a result of these negative expectations and worry, may experience somatic responses such as tense muscles or rapid heart rate. Similarly, an athlete may experience conditioned somatic anxiety responses upon arriving at an event, entering the changing room, or hearing the audience in the stadium. This may cause the athlete to begin worrying about these somatic symptoms, thereby eliciting cognitive anxiety (Martens et al., 1990). This interaction has a direct effect on the athlete's performance. Ziegler (1980) developed the 'Negative thought anxiety cycle' which illustrates the effect of cognitive and somatic anxiety on performance (Figure 2.3.1).



**Figure 2.3.1:** The negative thought anxiety cycle - adapted from Ziegler (1980).

Figure 2.3.1 shows how cognitive anxiety or worry can cause an increase in somatic anxiety which then has adverse effects on performance. Also, any increases in somatic anxiety may elicit cognitive anxiety, again causing a decrement in performance. A decrease in performance can elicit further cognitive worry. McAuley (1985) found that performance was a significant predictor of cognitive anxiety. It has not been shown that a decrease in performance can directly elicit increases in somatic anxiety. Cognitive appraisal of the performance would first have to occur suggesting that, in this situation, cognitive anxiety elicits somatic anxiety when performance decreases.

### *2.3.3 Measurement of multidimensional anxiety*

The development of questionnaire measures of anxiety has mirrored the development of anxiety from a unidimensional to a multidimensional construct. The questionnaires provided self-reported measures of psychological, physiological and behavioural aspects of anxiety. Other physiological and behavioural measures of anxiety exist, although, these will not be discussed in this literature review. Consequently, the measures of somatic anxiety are the individual's perception of physiological arousal not actual measurements of physiological arousal.

Taylor (1953) developed the Taylor Manifest Anxiety Scale (TMAS) from items indicating anxiety on the Minnesota Multiphasic Personality Inventory (MMPI). It was originally developed as a device for selecting subjects for experiments in human motivation (Taylor, 1953). Alpert and Haber (1960) identified limitations in the TMAS due to its measurement of general anxiety state. They indicated the need for increased situational specificity to allow for a more sensitive measure of anxiety and its effect on academic achievement. Consequently they developed the Achievement Anxiety Test (AAT) and found specific anxiety scales to be more valid than general anxiety scales. Alpert and Haber (1960) also distinguished between facilitative and debilitating anxiety (see section 2.3.5) and developed two scales of the AAT; the facilitating anxiety scale and the debilitating anxiety scale.

Following the distinction between trait and state anxiety, Spielberger, Gorsuch and Lushene (1970) developed the State-Trait Anxiety Inventory (STAI). The trait scale was developed to measure individual anxiety-proneness whilst the state scale measured fluctuations in state anxiety as a result of situational stress. Both scales were developed to provide reliable, brief measures of trait and state anxiety (Spielberger, 1971). With the need for situation specific anxiety measures already highlighted, and a sport specific trait anxiety measure was developed; the Sport Competition Anxiety Test (SCAT; Martens, 1977). Numerous investigations into anxiety in sport have incorporated SCAT (Martens & Simon, 1976; Gould, Horn & Spreeman, 1983; Gould, Petlichkoff & Weinberg, 1984; Karteroliotis & Gill, 1987; Crocker, Alderman & Smith, 1988). SCAT is a trait measure of anxiety and consequently measured the anxiety athletes generally experienced in competitive situations. Consequently, problems existed with the administration of SCAT in a competitive situation because the proximity of the competition may confound the measure of A-trait (Martens et al., 1990).

The conceptualisation of multidimensional state anxiety as incorporating cognitive and somatic components prompted the development of a sport-specific state measure of anxiety, the Competitive State Anxiety Inventory - 2 (CSAI-2; Martens et al., 1983 cited by Martens et al., 1990). The CSAI-2 was a revised version of the Competitive State Anxiety Inventory (CSAI; Martens, Burton, Rivkin & Simon, 1979). The CSAI-2 has significantly advanced the research into competitive state anxiety in sports and has been used a large number of studies since its development (Gould, Petlichkoff & Weinberg, 1984; McAuley, 1985; Krane & Williams, 1987; Jones, Swain & Cale, 1990; Jones, Hanton & Swain, 1994).

Smith, Smoll and Schutz (1990) developed a sport specific multidimensional trait measure of anxiety; the Sport Anxiety Scale (SAS). It was suggested by researchers that SCAT was primarily a measure of somatic anxiety. Consequently, the SAS provided a measure of both cognitive and somatic anxiety and again paralleled the distinction between multidimensional anxiety components.

#### *2.3.4 Factors affecting multidimensional competitive state anxiety*

The following review of literature focuses on research into competitive state anxiety in sport. Most of the research incorporated the measurement of cognitive and somatic anxiety and self-confidence via the CSAI-2 (Martens et al., 1990) and in particular the assessment of the temporal patterning of multidimensional anxiety components and their relationship to performance.

##### *Skill level*

Fenz (1964) and Fenz and Epstein (1967) found differences in the level of anxiety exhibited between novice and experienced parachutists. The experienced parachutists showed lower physiological arousal and reduced fear estimates in comparison to novice parachutists prior to and during a parachute jump. Epstein and Fenz (1965) found changes in the emotional reactions of parachutists after a large number of parachute jumps. They concluded that the subjects became desensitised to the task and emotional adaptation had occurred. After the parachute jump, the experienced parachutists showed a rise in fear. Epstein and Fenz (1965) suggested that the experienced parachutists employed active emotional control over and above the possible conditioning that would occur through repeated exposures to the anxiety-evoking stimuli.

Mahoney and Avenir (1977) found that more successful gymnasts exhibited slightly higher levels of anxiety prior to a competition, yet during the crucial performance, they exhibited less anxiety than non-successful gymnasts. They reported that the less successful gymnasts focused on self-verbalisations and images of doubt and impending tragedies. In accordance with Epstein and Fenz (1965), they suggested that the successful gymnasts employed different styles of coping with anxiety prior to and during the competition. Martens et al. (1990) analysed the effects of skill level on multidimensional competitive state anxiety components measured by the CSAI-2. They concluded that low skilled athletes were significantly higher in cognitive anxiety and somatic anxiety and lower in self-confidence than the highly skilled athletes. Krane and

Williams (1994) identified that college athletes displayed lower cognitive and somatic anxiety than high school athletes.

### *Sex differences*

Using SCAT, Martens (1977) reported that female athletes were higher in cognitive anxiety than males. Jones and Cale (1989) analysed the differences in the patterns of anxiety between males and females as the competition approached. Female athletes showed a progressive increase in cognitive anxiety where males exhibited no change. Females also reported an earlier increase in somatic anxiety than males. On the day of the competition, females exhibited a decrease in self-confidence. The self-confidence for the males remained stable. These results incorporated the investigation of the temporal patterning of multidimensional anxiety (see Section 2.3.4). Jones, Swain and Cale (1991) supported the increase in cognitive anxiety as the competition approached for females (Jones & Cale, 1989), but did not support the earlier increase in somatic anxiety. The females reported lower levels of self-confidence than males. Further research into the sex differences in CSAI-2 components revealed that females exhibited higher cognitive and somatic anxiety and lower self-confidence than males (Martens et al., 1990). Krane and Williams (1994) supported the higher levels of self-confidence in male track and field athletes.

Other research has examined the relationships between gender role endorsement and competitive state anxiety utilising the BEM sex role inventory and the CSAI-2 (Swain & Jones, 1991). The results indicated differences in cognitive and somatic anxiety and self-confidence between the groups; *masculine males, feminine males, masculine females and feminine females*. Based on these findings, they suggested that future research should consider gender differences rather than sex differences for competitive state anxiety.

### *Sport type*

Simon and Martens (1979) indicated in their study that sport participants in individual sports experienced greater state anxiety than team sports participants. Team sports reduce the amount of evaluation of individual players and the responsibility of the performance is diffused amongst the whole team (Scanlan, 1977). Martens et al. (1990) supported this suggestion with the level of state anxiety. They found that athletes in individual sport exhibited significantly higher levels of cognitive and somatic anxiety and lower self-confidence than team sports participants.

A further distinction in sport type is the subjectively and objectively scored sports. Subjectively scored sports, for example gymnastics, diving, boxing and the dressage phase of horse trials, are vulnerable to judges' bias (Martens et al., 1990). In many sports, the effect of this bias is reduced by the scoring system used, for example; an increased number of judges and discarding the highest and lowest scores. It is, however, still viewed by some competitors as a cause for concern. Martens et al. (1990) found that athletes participating in subjectively scored sports reported higher levels of cognitive anxiety and lower self-confidence. There was no difference between the athletes for somatic anxiety. This supports the view that cognitive anxiety and self-confidence are related to factors involving performance expectations and evaluations regarding one's performance (Morris et al., 1981). The distinction of the components of state anxiety is important as theoretical and empirical evidence suggests that each component is related to performance in a different manner (Gould et al., 1987). Inherent in this are individual differences in anxiety response patterns, such as, skill level and gender. A knowledge of these in relation to the level of multidimensional competitive state anxiety is required for the maintenance and reduction of anxiety.

#### *2.3.5 Temporal patterning of multidimensional competitive state anxiety*

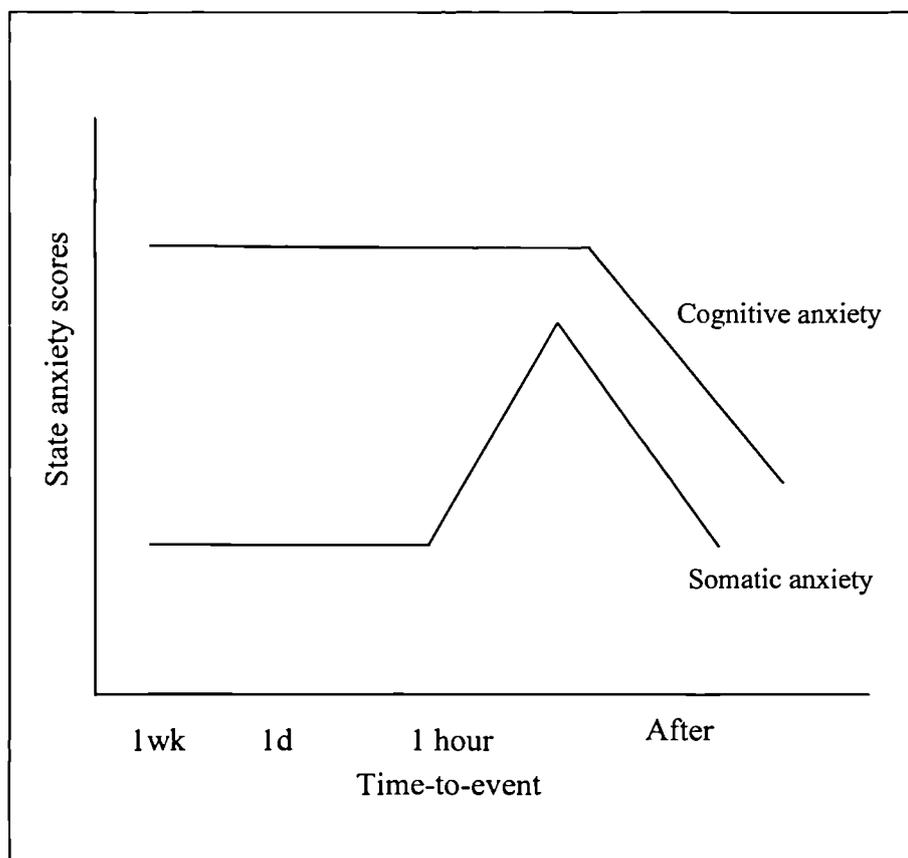
The components of anxiety, measured by the CSAI-2 vary in different ways prior to, during and after the competition (Gould et al., 1984; McAuley, 1985; Jones et al, 1989; Martens et al., 1990). Hence, temporal patterning of anxiety components exists.

Cognitive anxiety increases substantially two days or even a week prior to the competition day (Jones, Cale & Kerwin, 1988). Jones and Cale (1989) found that cognitive anxiety increased for both male and female athletes as the competition approached. Gould et al. (1984) concluded that cognitive anxiety was high one week before the competition and remained stable as the competition approached. This was supported by Jones et al. (1988). This is due to the fact that cognitive anxiety is associated with the individual's performance expectations (Morris et al., 1981). Fluctuations in cognitive anxiety may occur with as a result of feedback about one's performance and therefore, changes in performance expectations.

As the competition approaches, somatic anxiety increases dramatically, immediately prior to the event (Jones et al, 1988; Jones and Cale, 1989). Increases in somatic anxiety usually occur on the day of the event and is a stimulus based response. Morris et al. (1981) suggested the causes for increases in somatic anxiety were non-evaluative, of shorter duration and consisting mainly of conditioned responses to stimuli. Such stimuli include arriving at the event, walking out onto the pitch or track and warm-up routines. After the competition, upon removal of the stressor, somatic anxiety levels return to baseline levels (Karteroliotis & Gill, 1987). Cognitive anxiety may remain high after the competition due to factors such as waiting for final results or athletes replaying and analysing their performance over in their mind. The generalised profiles of cognitive and somatic anxiety for an athlete is represented diagrammatically in Figure 2.3.2.

Self-confidence, as measured by the CSAI-2 was suggested to mirror the cognitive anxiety component. When cognitive anxiety levels were high and the athlete was concerned about his/her performance, self-confidence was suggested to be low. Gould et al. (1984) found in their study of volleyball players that, similar to cognitive anxiety, self-confidence remained stable from one week before the competition through to 20 minutes before the competition. Jones and Cale (1989) evaluated the self-confidence component for male and female University athletes. Self-confidence remained stable for the male athletes, however, for the female athletes, there was a decrease in self-

confidence from 2 days before to 30 minutes before the competition. Karteroliotis and Gill (1987) found a decrease in self-confidence between pre- and mid-competition for a laboratory task.



**Figure 2.3.2:** The temporal patterning of cognitive and somatic anxiety prior to, during and after competition.

It was suggested that self-confidence is related to perceived ability (Gould et al., 1984) and perceived readiness (Jones et al., 1990). Consequently, the stability or changes in self-confidence are in accordance with changes in the athletes' perceived readiness and interpretation of their ability. After the competition, self-confidence may remain high due to positive perceptions of performance (McAuley, 1985) or return to baseline levels (Karteroliotis & Gill, 1987).

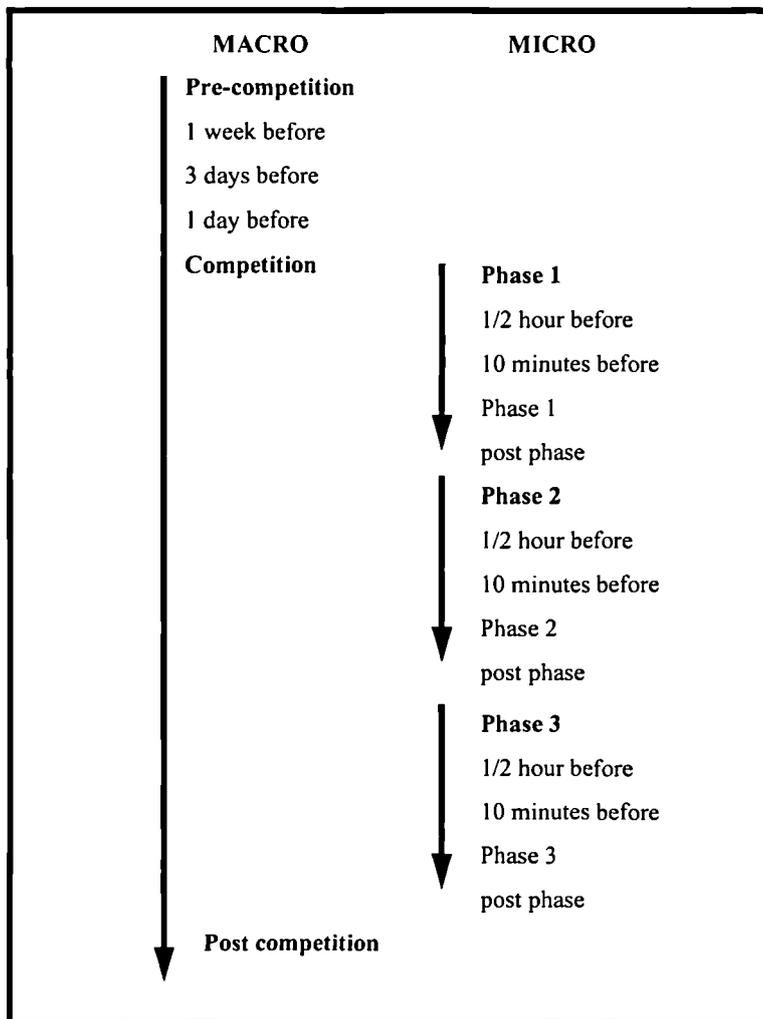
The temporal patterning of anxiety alters between different sports. Krane and Williams (1987) measured state anxiety components 24 hours, 2 hours and 10 minutes before a competition. They noted an increase in cognitive anxiety and a decrease in self-

confidence for gymnasts in comparison to golfers. Somatic anxiety was not different 24 hours prior to the competition, but subsequent to this, gymnasts reported increased levels of somatic anxiety whereas, the golfers reported no change. These results highlighted the differences in the temporal patterning of state anxiety for a subjectively scored sport (gymnastics) compared to an objectively scored sport (golf). It should be noted that the gymnasts were of school level and the golfers were of a collegiate level and so it is possible that the differences between the two groups was related to their level of skill rather than the sport characteristics. More research is required to investigate differences in the temporal patterning of multidimensional state anxiety in both different sports and sports with different task characteristics.

The research into the temporal patterning of multidimensional competitive state anxiety to date has measured anxiety prior to competition with little research measuring anxiety during or after the competition. McAuley (1985) found significant relationships between performance and post-competition cognitive anxiety and self-confidence. Karteroliotis and Gill (1987) found increases in cognitive and somatic anxiety and a decrease in self-confidence from pre-competition to mid-competition. From mid-competition to post-competition, they found a decrease in cognitive and somatic anxiety and an increase in self-confidence. Martens et al. (1990) stated the need for future investigations to find competitive settings in which anxiety can be measured during the competition.

Almost all sports require competitors to undertake several contests, bouts, heats, rounds or phases before they have completed the competition, for example; decathlon, diving, field athletics events, gymnastics, horse trials and so on. The anxiety experienced by the athlete during a phase and between two phases has a great impact on the performance expectations and anxiety experienced for the next phase and consequently, the whole competition. Thus, it is possible that the temporal patterning exists prior to the whole competition; *macro time-to-event paradigm*, and then the temporal patterning of anxiety occurs on a smaller time scale prior to each phase of the competition; *micro time-to-event paradigm* (Figure 2.3.3; Section 7.1). Horse trials provide an ideal opportunity to

investigate the changes in state anxiety throughout the competition and the reciprocal relationship between anxiety and performance.



**Figure 2.3.3:** The macro and micro cycles of the temporal patterning of multidimensional competitive state anxiety in sports with multiple phases.

*2.3.6 The direction dimension of multidimensional competitive state anxiety*

An important aspect of multidimensional anxiety is the individual's perception of the anxiety as debilitating or facilitative. Previous conceptions of anxiety as always negative and detrimental to performance have now been modified. Anxiety can act as an energiser and benefit athletic performance (Mahoney & Avener, 1977). Hence, anxiety involves intensity, that is, the level of anxiety experienced, but it also involves direction.

This depends on whether it is perceived by the individual to help or hinder performance. The key factor is the individual's interpretation of the situation.

Alpert and Haber (1960) distinguished between anxiety that was facilitative and anxiety that was debilitating to performance. They emphasised that the debilitating and facilitating effects of anxiety may be uncorrelated and hence, the facilitating effects of anxiety should be measured independently and not inferred from the absence of negative responses. Consequently, they developed the facilitating and debilitating scale of the AAT (see Section 2.3.2). Mahoney and Avenier (1977) investigated the anxiety patterns of successful and non-successful elite gymnasts. The subjective reports of anxiety level revealed that the successful elite gymnasts seemed to “use” their anxiety as a stimulant to better performance. They suggested that athletes could be trained to use the energising qualities of anxiety to improve performance rather than “fight” the negative aspects of anxiety.

The distinction between facilitative and debilitating effects of anxiety was also identified by Carver and Scheier (1988) in their model of a control-process perspective on anxiety. Specifically, they suggested that the critical variable distinguishing between individuals who interpret anxiety as debilitating and those who interpret it as facilitative, was the individual's expectancy (favourable versus unfavourable) of being able to cope with the anxiety experienced and being able to complete the task.

The development of a facilitative and debilitating effect on performance scale was added to the CSAI-2 to measure the direction dimension of state anxiety components (Jones, 1991a). For each item on the CSAI-2, subjects were required to complete a further scale responding to the extent to which they perceived the level of anxiety to be facilitative or debilitating to performance. The modified version of the CSAI-2, incorporating the direction scale (Jones & Swain, 1992) has been used to advance the research into the anxiety experiences of athletes.

Jones, Swain and Hardy (1993) analysed competitive state anxiety intensity and direction dimensions for a sample of female gymnasts. Within this sample, the comparison of a poor performance group and a good performance group revealed no differences for CSAI-2 component intensity scores. However, the good performance group reported their cognitive anxiety as more facilitative and less debilitating to performance than the poor performance group. It was suggested that the increased levels of cognitive anxiety were perceived by the good performance gymnasts as possibly enhancing motivation and facilitating an appropriate attentional focus.

The analysis of elite and non-elite swimmers again revealed no differences between the two groups in terms of the intensity of cognitive and somatic anxiety measured one hour prior to an important race (Jones, Hanton & Swain, 1994). The analysis of the direction of anxiety, however, showed that the elite swimmers interpreted both cognitive and somatic anxiety as more facilitative to performance than the non-elite swimmers.

Martens et al. (1990) stated that the distinction between cognitive and somatic anxiety has implications for the type of stress management intervention technique used for individual athletes. The 'matching hypothesis' has been adopted by researchers, where the treatment of anxiety is most effective when the method adopted is directed at the anxiety system most activated by the stressor; cognitive or somatic anxiety. Maynard, Hemmings and Warwick-Evans (1995) emphasised that the interpretation of anxiety as facilitative or debilitating to performance must also be taken into account when developing a stress management programme for athletes. A treatment aimed at reducing cognitive anxiety which is actually reported by the athlete as facilitative to performance could be very detrimental to the performance of the athlete.

Consequently, the analysis of the intensity and direction of anxiety is important to further our understanding of the athletes' experiences in sport. It is also important for the development of stress management intervention programmes for athletes. Anecdotal evidence suggests that horse trials riders experience the symptoms of cognitive and

somatic anxiety as facilitative or debilitating to performance, particularly for the cross-country phase of the competition. The measurement of both scales will advance interpretation of anxiety during the competition and between phases of a competition.

#### 2.4 Competitive state anxiety and sports performance

Anxiety research has attempted to identify the relationship between anxiety and performance. Previous explanations have encompassed the development of models to explain the relationship. The Drive Theory and Inverted-U Hypothesis have been incorporated in much research, however, more recently, researchers have indicated problems with these theories are too simplistic in attempting to explain the anxiety-performance relationship (Martens, 1972; Cooke, 1986; Hardy 1990; Parfitt, Jones & Hardy, 1990).

The development of sport-specific measures of competitive state anxiety has advanced the research in this area (Parfitt et al., 1990). In the development of the CSAI-2 and the development of multidimensional anxiety theory, Martens et al. (1990) hypothesised that cognitive anxiety and self-confidence are more strongly related to performance than somatic anxiety due to the fact that somatic anxiety is hypothesised to dissipate after the onset of the competition. Cognitive anxiety and self-confidence are both related to performance expectations (Morris et al., 1981; Martens et al., 1990), which continue to fluctuate throughout the competition. The relationship between anxiety and performance was investigated in Junior National male golfers (Martens et al., 1990), however, CSAI-2 components did not predict performance. The researchers suggested that the performance measure lacked precision and consequently, the subtle changes in anxiety were not evident.

Gould et al. (1984) failed to find relationships between anxiety components and performance for collegiate wrestlers. McAuley (1985) did not find support for the hypothesis that CSAI-2 components could predict performance. However, he concluded

that performance was a significant predictor of post competition cognitive anxiety and self-confidence. Karateroliotis and Gill (1987) also failed to find relationships between anxiety components and performance in a laboratory task. They suggested that the simplicity of the task in their experiment was an explanation for the lack of differences. The task did not include complex motor skills that might have been impaired by anxiety.

Barnes, Sime, Dienstbier and Plake (1986) investigated the relationships of the CSAI-2 components and the performance of college swimmers. Only cognitive anxiety was significantly related to performance which accounted for 15% of the total performance variance. Gould, Petlichkoff, Simons and Vevera (1987) assessed the relationships of anxiety to pistol shooting performance. Using intra-individual analysis methods (Sonstroem & Bernardo, 1982), they found an inverted-U relationship between somatic anxiety and performance. Cognitive anxiety was not related to performance, whereas self-confidence was negatively related to performance. They found that somatic anxiety interfered with performance when cognitive anxiety was low. Consequently, they suggested that somatic anxiety always affects performance but becomes masked by the more powerful, debilitating effects of cognitive anxiety. It was suggested that the lack of interpretable findings for cognitive anxiety and self-confidence may have been explained by the lack of ego-threat experienced by the subjects (Gould et al., 1987).

The inverted-U relationship between somatic anxiety and performance was also shown by Burton (1988) investigating the performance of swimmers. Burton (1988) also found a negative linear relationship between cognitive anxiety and performance and a positive linear relationship between self-confidence and performance. Cognitive anxiety was more strongly related to performance than somatic anxiety.

More recently, Krane, Williams and Feltz (1992) examined the relationships between anxiety components, performance expectations and golf performance. They concluded that the most significant predictor of performance was previous performance. Consequently, the relationship between anxiety and performance has remained elusive.

Martens et al. (1990) suggested that the studies failing to support the predicted relationships between anxiety components and performance was because they incorporated absolute performance measures. It is possible that other measures of performance, for example, perceived success might be more appropriate.

Jones et al. (1993) suggested that the lack of predicted relationships between anxiety components was due to the fact that researchers were measuring the intensity of anxiety and not considering the relationships between the direction of anxiety and performance. They suggested that the individual's interpretation of anxiety as facilitative or debilitating to performance may yield more meaningful relationships to performance. In their analysis of anxiety components and female gymnasts beam performance, Jones et al. (1993) found a relationship between self-confidence and performance. The direction scores were significantly different between a good performance group and a poor performance group. Jones et al. (1994) also found relationships between the direction scores measured by the modified CSAI-2 and swimming performance. Consequently, it is suggested that researchers need to consider the individual's interpretation of the level of anxiety as facilitative or debilitating when attempting to predict performance.

Other models have been developed to attempt to explain the anxiety-performance relationship. The Catastrophe Theory (Hardy, 1990) indicates that when anxiety affects performance rather than causing a gradual decrease in performance (Inverted-U hypothesis), performance deteriorates dramatically. It incorporates cognitive anxiety, physiological arousal and performance in a three-dimensional model to explain the relationships and has received some support (Hardy, 1990; Parfitt et al., 1990). However, Gill (1994) criticised the model for its complexity and suggested that the precision required to test the model is beyond current available methodologies. She further expressed the suggestion that the reality of anxiety-performance, at least at the level of interest for sport and exercise psychology, may not be nearly as precise as the model (Gill, 1994, p.24).

Hanin's (1980) model explaining the relationship between state anxiety and performance employs an Interactionist approach. The zone of optimal functioning theory (ZOF) suggests that by repeated measures of state anxiety, the researcher can identify the individual's zone of optimal functioning (mean pre-competition state anxiety score plus or minus 4 units), where performance is optimal (Imlay, Carda, Stanbrough, Dreiling and O'Connor, 1995). If the individual experiences state anxiety higher or lower than this optimal level, then they effectively move out of the zone of optimal functioning and performance deteriorates. Criticisms of the model have included the fact that it is based on a unidimensional view of state anxiety. However, with the development of multidimensional state anxiety it is possible for the underlying principle of ZOF theory to be adapted for multidimensional anxiety components (Krane, 1993). This model requires further testing in the context of sports.

In summary, the development of multidimensional state anxiety has stimulated a great amount of research within the context of sports. The anxiety-performance research has shown contradictory findings. The assessment of the individual's interpretation of anxiety as facilitative or debilitating to performance may prove to be a key factor in the prediction of the performance of the individual.

## CHAPTER 3

Review of literature - Part 2: Factors associated with multidimensional anxiety theory - antecedents of anxiety and causal attributions.

### **3.0 Review of literature- Part 2: Factors associated with multidimensional anxiety theory - antecedents of anxiety and causal attributions.**

The previous literature review section examined the nature of the multidimensional competitive state anxiety response and factors affecting it; skill level, gender, sport type and task characteristics. The anxiety-performance relationship was also investigated. Other factors that affect the anxiety reaction experienced by athletes include the antecedents of anxiety and the causal attributions related to a performance. These factors will be reviewed in the present literature review section.

#### **3.1 Antecedents of multidimensional competitive state anxiety**

Acknowledgement of the antecedents of anxiety is important when studying multidimensional anxiety. The antecedents of anxiety involves the individuals' perceived causes of their anxiety. Consequently, the investigation into these causes can have important implications for anxiety control intervention strategies. Quite often, it is more advantageous to treat the cause rather than the symptom of anxiety.

There are a wide range of antecedents identified by athletes as affecting their level of pre-competition anxiety. For example, antecedents may include personality, past performances, perceived ability, perceived readiness, both mental and physical and training. Other antecedents which are external to the athlete include other competitors, trainer/coach, parents, friends, judges, officials, facilities, weather and competition conditions.

It has been suggested that the components of anxiety as measured by the CSAI-2, that is, cognitive and somatic anxiety and self-confidence are elicited by different antecedents (Martens et al., 1990). Somatic anxiety was viewed as a conditioned response to environmental stimuli, and antecedents such as the competition site, or changing room are thought to elicit this component (Martens et al., 1990). Cognitive anxiety and self-confidence were, however, thought to be related more to antecedents concerning the athlete and their perceptions of themselves and their ability, performance expectancies and perceived readiness (Morris et al., 1981). Liebert and Morris (1967) demonstrated that

individual performance expectancies before evaluation were highly correlated with cognitive anxiety but not somatic anxiety.

Gould et al. (1984) investigated the antecedents; *competitive trait anxiety, perceived ability, experience and previous match outcome* and their relationship to CSAI-2 components for collegiate wrestlers. The findings showed that no single antecedent was strongly related to all CSAI-2 components. This finding supports the independence of the multidimensional anxiety components (Martens et al., 1990). Both competitive trait anxiety and experience were significant predictors of cognitive anxiety, however, experience was the strongest predictor. Perceived ability predicted the CSAI-2 component self-confidence.

Yan Lan and Gill (1984) found that self-efficacy was a predictor of performance of an experimental task. Specifically, subjects performing a high-efficacious task experienced lower cognitive and somatic anxiety and higher self-confidence than subjects performing a low-efficacious task. These results provided support for the theory that higher self-efficacy leads to lower levels of anxiety (Bandura, 1977). Jones et al. (1993) found that self-confidence as measured by the CSAI-2 was a significant predictor of performance, thus providing a possible link between self-confidence, self-efficacy, anxiety and performance. The relationships between these components and the actual process occurring requires further investigation.

McAuley (1985) observed no relationships between anxiety and performance, however, he demonstrated that performance was an antecedent of post competition cognitive anxiety and self-confidence. This finding is important to the application of anxiety research to sports which contain multiple phases for each competition. Future analysis should encompass the investigation into performance as an antecedent of subsequent anxiety levels.

Jones et al. (1990) investigated the antecedents of anxiety and performance in middle distance runners. Antecedents identified *through factor analysis of a Pre-Race questionnaire* were; perceived readiness, attitude towards previous performance, perception of difficulty goal and the athlete's perception of whether he/she could achieve it, the influence of the

coach and the suitability of track and weather conditions. The results revealed that cognitive anxiety and self-confidence were elicited by perceived readiness. Attitude towards previous performance predicted cognitive anxiety yet failed to predict self-confidence. Consequently, the results provided partial support for the prediction that cognitive anxiety and self-confidence would be elicited by similar antecedents. The lack of antecedents predicting somatic anxiety was thought to be due to the fact that few items on the questionnaire related to situational factors such as the competition site, the changing room preparation and so on. Somatic anxiety is viewed as a conditioned response to environmental stimuli, such antecedents were not incorporated in the pre-race questionnaire.

Jones, Swain and Cale (1991) found differences in the antecedents reported by male and female University athletes. Specifically, for females, perceived readiness predicted cognitive anxiety. However, for males, the opposition and match importance were significant predictors of cognitive anxiety. For somatic anxiety, no predictors were found for the female athletes, whereas the factor, opposition predicted somatic anxiety for the males. Perceived readiness was a significant predictor of self-confidence for the females and the 'think win' factor was a significant predictor for self-confidence for the males. In conclusion, the antecedents for females were related to personal goals and standards, whereas for the males, the antecedents identified were related to interpersonal comparison and winning.

In summary, different antecedents elicit the CSAI-2 components. More research is needed into different sports to enable generalisations about antecedents and anxiety components to be made. This has implications for the development of stress management intervention programmes for individual athletes. The antecedents must be taken into consideration to identify the causes of anxiety and hence the areas at which stress management techniques can be aimed. The antecedents of anxiety have been shown to differ between males and females. However, the results were obtained in one study. It would be necessary to replicate these findings and also assess whether differences occur between the antecedents of athletes of differing skill levels and experience.

### 3.2 Causal attributions, competitive state anxiety and sports performance

In sport psychology research, causal attribution theory attempts to explain an athlete's perceived causes of a performance. These causes are termed attributions and are an attempt made by the athlete to explain their performance. An athlete may make an attribution about themselves or another person and thus attributions include self-perceptions and perceptions regarding the actions of other people. Hence, the attribution process is one where the individual ascribes a characteristic or motive to oneself or to another person. Attributions are constructed by the individual to understand daily events and consequences in their lives and to make the environment more meaningful (Heider, 1944).

The study of athletes' attributions can reveal important information about their perceptions of sport performance, for example, whether they perceive their performance outcome to be in their control or controlled by external factors. The attributions made by athletes also have a considerable effect on their emotions (Biddle, 1984; Weiner, 1985; Russell & McAuley, 1986; Hackfort, 1991), motivation (Biddle, 1984) and perceptions of success (McAuley, 1985) for subsequent performances during competition. Attributions may be manipulated by the sports psychologist or coach to ensure the athlete is approaching competitions with optimal emotional and motivational control (Biddle, 1984).

#### *Attribution theory*

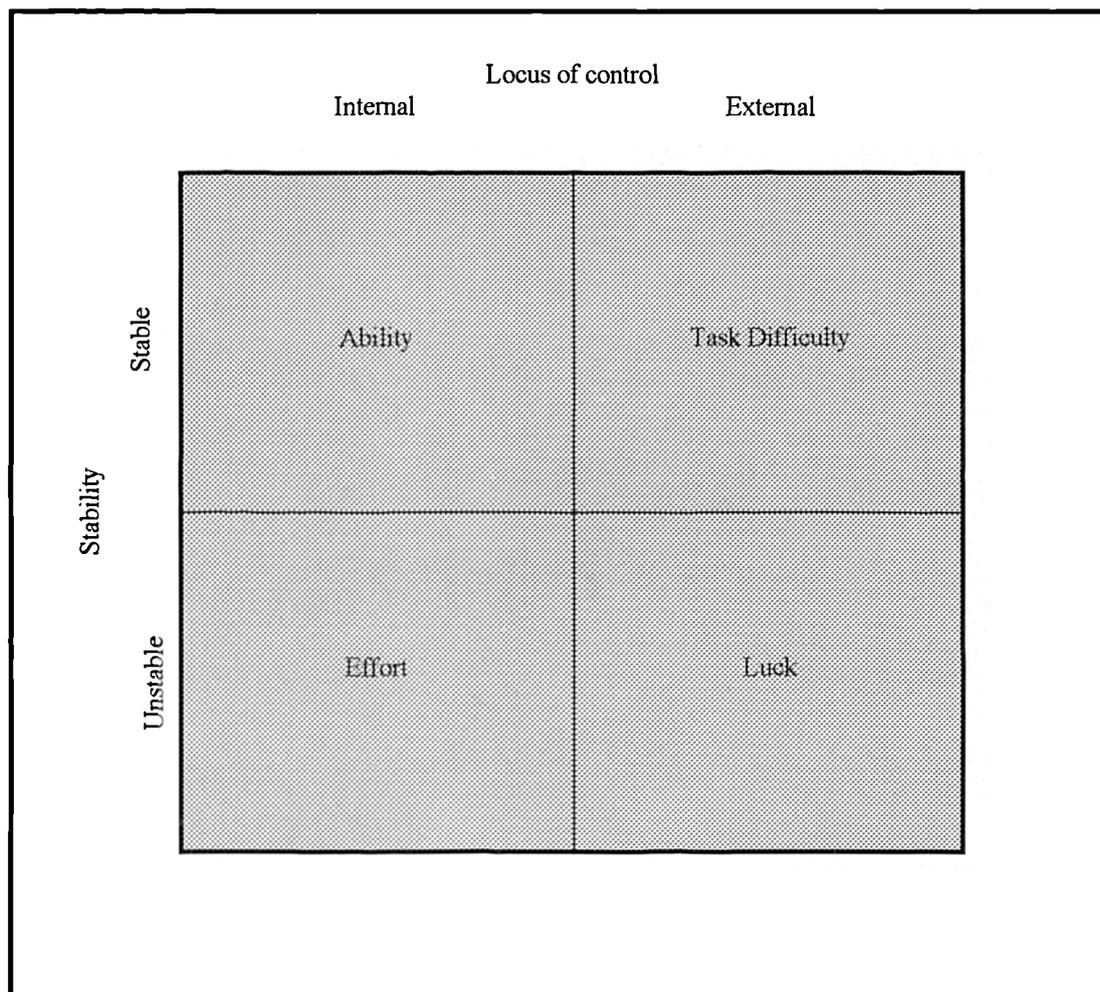
Attribution theory is a cognitive approach to aid the understanding of how an individual feels about him/herself. It is directly related to the person's perception of the cause and effect. Weiner (1985) described attribution theory as a complex theory of attributions which greatly influence the individual's actions, feelings, confidence and achievement motivation.

Heider (1944) initially developed causal attribution theory with the distinction between 1) factors within the person (personal force) and 2) factors within the environment (environmental force). This therefore distinguishes between internal and external

factors of attribution. The personal force factor was subdivided into ability and trying (effort) factors. The factor 'trying' could in turn be divided into intention (what the person is trying to do) and exertion (how much effort is expended). The environmental force factor was subdivided into the factors luck and task difficulty. The factors of task difficulty and ability provide information as to whether the individual can or cannot complete the task and consequently interacted to form another factor 'can' (or cannot). The behavioural outcome is thus dependent on the factors; trying (effort), 'can' and luck or the addition of personal force and environmental force.

The attributional theory reported by Heider (1944) emphasised perceived causation and not actual causation. Individuals' perception of events and their outcome can differ considerably. For example, a rider may attribute his/her clear cross-country round to luck whereas another rider may attribute the outcome to his/her ability in the cross-country phase.

Weiner (1972) developed Heider's attributional model and incorporated the four factors into two main causal dimensions; stability (stable or unstable) and locus of control (internal or external). Figure 3.2.1 illustrates Weiner's classification of the four attributional factors. The locus of control dimension refers to the person's belief about whether he/she is in control of what happens to him/her. Both ability and effort are factors where the person feels in control of their performance and outcome. The factor identified by Heider (1944) as ability is classified by Weiner (1972) as an internal and stable factor. An individual's ability is stable over time. Changes in performance also result from constantly changing or unstable factors, such as effort, which is classified as an internal, unstable factor. A rider may produce different levels of effort in each horse trials competition, however their ability to ride cross-country rounds remains relatively stable.



**Figure 3.2.1:** Weiner's (1972) classification of the four causal attribution factors.

Both task difficulty and luck are factors that are external and are perceived by the individual as not under their control. Task difficulty is a stable factor, for example the standard of a Novice horse trial remains the same from year to year. Luck is however, classified as an unstable and variable factor.

This classification system for attributions was initially thought to cover all attributional statements. Weiner (1972) recognised the problems with this four factor system. Problems arise when attempting to classify attributional statements such as; *'the referee was biased'*; *'the dressage judge didn't like my horse'*; *'I was late and didn't have enough warm up time'*. Roberts and Pascuzzi (1979) studied children in a sports setting utilising open ended attributional statements. They reported that only 45 per

cent of the statements could easily be categorised into the four attributional factors identified by Weiner (1972).

Subsequent research led to the identification of another dimension; controllability (Weiner, 1979), where causal attributions can be classified as either controllable or uncontrollable. An attributional statement that is classified as controllable, is defined by Weiner (1979) as one which the individual believes is under his/her control. An uncontrollable attribution is one where the individual believes he/she does not have control, for example, a badminton player may attribute a lost point to; *"My opponent's smash was too hard and fast"*.

To reduce the ambiguity between the locus of control and controllability dimensions, Weiner (1985) suggested the change of the locus of control dimension to locus of causality dimension. It is possible to have an attribution statement that is internal to the athlete (ability) and which is perceived by the athlete as uncontrollable; *"I didn't react fast enough to reach the shuttlecock, but I can't control how fast I react"*. A problem with this classification scheme is that it is difficult to ascribe attributional statements to both external and controllable factors, consequently, a redundant attributional category exists. Attribution theory was developed further by Russell (1982) (see following section).

### *Measurement of Attributions*

There are three traditional methods of measuring causal attribution statements. Firstly, is the *Structural Rating Scale*, where individuals rate several attributional statements regarding how they apply to an event. The list of attributions includes, ability, task difficult, luck and effort (Cox, 1990). The second method involves an adaptation of the Structural Rating Scale and is called the *Structural Percentage Rating Scale* method. Individuals are required to rate given attributional statements in terms of their percentage contribution to an event. The third method involves *Open-ended* attributional statements devised by the individual or chosen from a long list of suggested attributions, again referring to a particular event. Once the subject has developed attributional statements, the researcher assigns these statements to specific

categories of the attributional model namely; ability, task difficulty, effort and luck. Criticisms of the first and second method include the constraint imposed on the subject where subjects are required to choose attributions from a list of statements which may not include statements relevant to their experience during the event (Cox, 1990).

The open-ended method of assessing causal attributions is also open to criticism. Specifically, when researchers assign the subjects' attributional statements to categories in the attributional model, they impose their interpretation and individual perception of the attributions onto the analysis. As individuals' vary considerably in their perceptions of events and their causes, researchers may inaccurately assign causal attributions to attribution model categories in comparison to individuals. Russell (1982) identified this distortion as 'fundamental attribution researcher error' To counteract this effect, Russell (1982) developed the Causal Dimension Scale (CDS).

The CDS is a self-report questionnaire assessing the subject's own open-ended causal attributions. Subjects provide a reason(s) they think contribute to the result of an event. The subject is then required to ascribe these causal attributions to causal dimensions themselves. Thus, the responses provided on this questionnaire should accurately reflect the meanings of causal attributions to the subject (Russell, 1982). Subjects are required to rate this/these reason(s) on 9 semantic rating scales which incorporate causal dimensions of *locus of causality*, *stability* and *controllability*. Each dimension is comprised of three questions with a rating scale of 1 to 9. A score for each dimension is obtained by totalling the separate scores for each question in that dimension category; *locus of causality*, *stability* and *controllability*. High scores on these scales represents the subject's interpretation of the cause as internal, stable and controllable respectively.

The CDS was found to be an accurate measure of causal dimensions in terms of the locus of causality and stability dimensions (Russell, 1982; Russell, McAuley & Tarico, 1987). The controllability dimension was found to be less reliable and lacked internal consistency (McAuley & Gross, 1983; Russell et al., 1987; Biddle & Jamieson, 1988). A further problem identified with the controllability dimension was the high correlation

with the locus of causality dimension, suggesting a lack of discriminant validity. In a second study (Russell, 1982) the CDS was investigated using the modified controllability dimension and concluded that the control dimension appeared valid accounting for 14-26% of the variance. Russell et al. (1987) have shown the CDS as a superior method for assessing causal dimensions in comparison to importance ratings and open-ended attribution methods.

Vallerand and Richer (1988) investigated the use of the CDS in a field setting in both success and failure conditions. They concluded that the control dimension lacked internal consistency and should therefore be replaced with items more closely relating to controllability before the CDS can confidently be used in a field setting. McAuley, Duncan and Russell (1992) proposed the multidimensionality of the controllable dimension arising from the lack of homogeneity among the original control items. They developed the Causal Dimension Scale II (CDSII) which incorporated the stability and locus of causality subscales and items measuring two further subscales termed 'personal control' and 'external control'.

The control dimension was slightly modified from Weiner's (1979) classification. McAuley et al. (1992) defined personal control (controllable cause) as one that could be changed or affected by the individual, whereas external control (uncontrollable cause) as one that could be changed or affected by other people such as, parents, family, trainer, coach, fans and so on. McAuley et al. (1992) identified task difficulty, luck and ability as uncontrollable and proposed that effort should be replaced by mood again an uncontrollable attribution. He also suggested that the only controllable attribution was effort which could be classified in terms of stability and locus of causality. This classification allows more reported attributions to be classified compared to Weiner's classification. In particular, the modification allows the efforts of other people be attributed to. Anecdotal evidence suggests that athletes do sometimes attribute their outcome to opponents, referees, coaches and judges.

The reliability and validity of the CDSII was assessed in both laboratory and field settings covering situations such as, mid-term examinations, basketball games, motor

performance laboratory tests and gymnastics routines. McAuley et al. (1992) concluded that the CDSII is a valid and reliable state measure of causal attributions and causal dimensions.

### *Attribution research*

Much of the attribution research in a sporting context to date has concentrated on the types of attributions made by athletes in achievement situations (Sanderson & Gilchrist, 1981; McAuley & Gross, 1983; Tennenbaum & Furst, 1985; McAuley, 1985; Biddle & Jamieson, 1988; Dabrowska, 1993). Initially, most studies assessed the attributional statements of athletes when in success and failure situations.

It is suggested that in achievement situations the attributions made by individuals would differ between *success* and *failure outcomes*. Individuals employ a *self-serving bias*, where the attributional statements identified help to either enhance the individual's ego or protect it (Fontaine, 1975). Put simply, in a successful situation, subjects' attributions are internal (ego-enhancing strategy). In a failure situation, subjects' attributions are external (ego-protecting strategy) (Iso-Ahola, 1979; Bradley, 1978).

More recent research suggests that subjects make internal attributions for both win and lose outcome situations and the difference between these situations is the extent to which the attributions are internal. McAuley (1985) found that winners and losers in gymnastics competitions attributed internally. In a study of attributions in table tennis competitions, Biddle and Jamieson (1988) supported this research, finding that both winners and losers attributed internally and also to unstable and controllable dimensions. The winners attributions were more controllable, less unstable than losers, however, contrary to previous research, were less internal.

Sanderson and Gilchrist (1981) investigated the relationships between causal attributions, state anxiety and performance in squash players. They found that winners attributed the success more internally and less externally than losers. Also, post-match anxiety correlated significantly and negatively with internal attribution score.

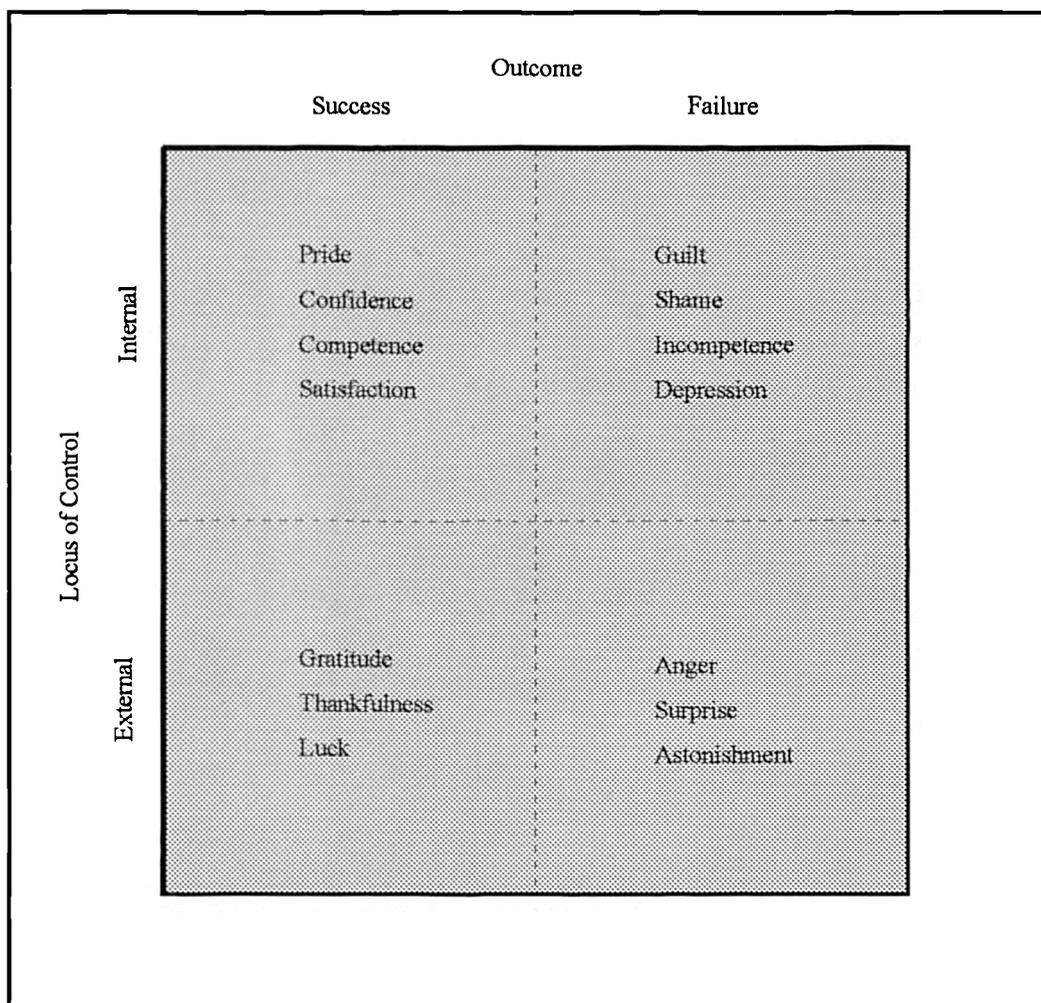
Specifically, individuals with high post match anxiety made fewer internal attributions, whereas, individuals with low post match anxiety made fewer external attributions.

Anecdotal evidence from many athletes suggest that in some achievement situations the actual outcome of performance (win or lose) is not as important as the *individual's perception of their performance as successful or unsuccessful*. Many sports, for example, gymnastics, horse trials and ice-skating provide feedback as to the outcome of performance in several ways. There is the actual score obtained from judges' marks, penalties incurred or points awarded. There is also the position the individual achieves at the end of the competition. There is however, the individuals' subjective interpretation of the quality of their performance which will relate to past performances and goal expectations. Athletes may not be placed in a competition but may perceive they have produced one of their best performances and therefore feel successful.

Leith and Praprevessis (1989) however, only found a significant difference between successful and unsuccessful subjects on the stability dimension. A trend towards greater controllability for successful subjects was apparent although this was not significant. It is suggested that future research into causal attributions, causal dimensions and sport settings take into consideration the athlete's perception of success or failure and measure these constructs rather than whether the athlete won or lost in a competition.

The attributions identified by athletes for a performance, either successful of unsuccessful, are very closely related to the *emotions (or affect)* they experience. Weiner (1972) acknowledged that a high positive affect would result from a success that was completely determined by luck, for example winning the lottery. However, this emotion differs from the pride and satisfaction associated with the success attributed to effort, ability and hence excellence in a given task. Recent research has incorporated the systematic study of affective consequences in the attribution process (Weiner, Russell & Lerman, 1979; Russell & McAuley, 1986; Hackfort, 1991).

Weiner, Russell and Lerman (1979) suggested that specific affective adjectives are used in response to causal attributions identified. These responses are related to the outcome of the situation. Weiner (1981) identified these adjectives in terms of locus of causality and success and failure situations (Figure 3.2.2). Specifically, individuals who attribute a successful situation to internal causes will experience positive emotions such as pride, satisfaction, confidence and competence. If an internal attribution is made regarding a failure then feelings of shame, guilt and depression (negative affect) will result. External attributions for success situations result in the individual experiencing gratitude, whilst failure situations produce the emotions of anger, surprise and astonishment.



**Figure 3.2.2:** The influence of outcome and locus of causality on affect. From Cox (1990, p. 237) Sport Psychology - concepts and applications.

More recently, McAuley and Shaffer (1993) investigated the affective responses of students to externally and personally controllable attributions employing a scenario methodology. Findings showed that externally controllable attributions generated anger-related affective responses. When attributions were self-related, personally controllable, the affective responses were more strongly related to guilt-related affects. Also, Courneya and McAuley (1993) examined efficacy, attributional and affective responses in older male and female subjects on a 5-month aerobic exercise programme. They concluded that stable and personally controllable attributions when subjects perceived themselves as more successful. These subjects also reported more positive affect. These studies highlighted the importance of personal control and self-efficacy in the generation of affective responses to performance.

In summary, the causal attributions can be measured using the CDSII which provides a situation specific state measure of the causal attributions. The CDSII also reduces the fundamental researcher bias associated with categorising attributions as internal or external. The perceived success must be taken into consideration when analysing causal attributions. In some cases the athlete's actual performance may be poor in relation to other competitors, however, the individual perceives the performance as very good in comparison to his/her previous performances for example. There are possible links between anxiety and the causal attributions for a performance. An individual who experiences high anxiety levels prior to a competition may produce a poor performance and hence influence the causal attributions made in relation to that performance. This area requires investigation (see Section 6.2).

### 3.3 British Horse Society (BHS) one day horse trials

The modern sport of eventing, also known as "horse trials", did not emerge as a competition until the beginning of the century. In the last thirty years it has grown in popularity to become one of the most keenly contested areas of equestrian competition. Horse trials are considered to be the most difficult and demanding of all equestrian activities. They demand equally high levels of expertise of the rider in three different fields of equestrianism; dressage, show-jumping and cross-country. In the handbook of the

International Equestrian Federation, the controlling body of most equestrian sports, the three-day event is described as,

“the most complete combined competition, demanding of the rider considerable experience in all branches of equitation and a precise knowledge of his horse’s ability, and of the horse, a degree of general competence, resulting from intelligent and rational training”.

cited by Gordon et al. (1989, p.73)

The rewards gained lie in the satisfaction of training the horse to a high level and in the thrill of competing. Financial rewards or prize money is very small compared to other sports and thus offer little incentive to compete.

Horse trials originated from a trial called ‘The Military’ which was designed to test the horses and riders of the Cavalry before they went to battle. It was realised that a Cavalry horse had to possess endless resources of speed and stamina, as well as being supple and totally obedient. It is these qualities that are required of the event horse. The horse trial consists of three phases; dressage, show-jumping and cross-country and tests the horse and rider’s adaptability through these phases. The following text briefly describes the main tests for the horse and rider in each phase. A detailed description of the requirements of each phase and the regulations for horse trials is available in The British Horse Society Horse Trials Group Rules (1994).

The dressage phase emphasises obedience and calmness of the horse. It requires the rider to be accurate and to show good application of aids. It is designed to show that an extremely fit event horse is sufficiently supple and obedient to perform controlled movements in the small dressage arena (Gordon et al., 1989). The show-jumping phase tests the precision and accuracy of the rider and suppleness and obedience of the horse; a result of the quality of training undertaken by the rider. It also tests the adaptability of both horse and rider. The horse and rider combination are required to jump cross-country fences at speed yet still be controlled and accurate enough to jump the more upright fences in the show-jumping. The cross-country phase tests the horse’s stamina and ability and the rider’s confidence, accuracy and precision. The fences are not particularly high, but solid and imposing, and

often awkwardly placed using the terrain to test the rider and the horse more completely. There is also a large amount of decision making required by the rider in relation to the choice of routes over a cross-country fence. The decisions are based on judgements of how the rider perceives he/she and the horse are coping with the course. A penalty mark from each phase of the horse trial is added together to produce a total penalty mark. The rider and horse combination with the lowest penalty mark wins the competition.

The BHS affiliated horse trials offer competitions of differing skill levels; Novice, Intermediate and Advanced. This is termed 'The Grading System'. The skill level is attained by awarding BHS registered horses with horse trials points for placings achieved in competition. Each horse starts at Novice level and then progresses through the points system to Advanced level. The number of points awarded to a horse at a competition is dependent on their placing. The total number of points achieved by a horse determines their grade or skill level. The grade categories are as follows;

- Grade 1 (Advanced) - 61 or more points.
  - Grade 2 (Intermediate) - from 21 to 60 points.
  - Grade 3 (Novice) - less than 21 points.
- (BHS horse trials rule book, 1994, p.23)

As the grading system applies to the standard of the horse, riders can compete in any Novice, Intermediate or Advanced class. For example, it is possible for an experienced rider who has competed in an Advanced horse trial on one horse to also compete in another horse trial of Novice standard on a Grade 3 horse. This system enables riders to train young and inexperienced horses at lower standard competitions whilst still competing in a higher standard of competition. Obviously, it would be foolhardy for an inexperienced rider who has only competed at Novice level to enter a competition of Advanced standard due to the increased complexity of the competition.

Potential problems may arise when assessing the anxiety levels of riders in Novice, Intermediate and Advanced competitions. Riders who usually compete at an Advanced level may not experience the same levels of anxiety when competing on a Grade 3 horse in

a Novice horse trial. To combat this effect the researcher adopted a grading system of riders based on the BHS Horse Trials Group Grading System. Riders were always tested when they competed at a horse trial which was equivalent to their highest level of competition. Thus, a rider who competes at an Advanced level on Grade 1 horses was only tested at an Advanced horse trial. A rider who competes at an Intermediate level on Grade 2 horses was only tested at an Intermediate horse trial and similarly, a rider who competes at a Novice level on Grade 3 horses was only tested at Novice standard horse trials. Thus riders were categorised as Novice, Intermediate or Advanced riders. This terminology will be used throughout this thesis.

### 3.3.1 Competitive state anxiety and performance in BHS horse trials.

Multidimensional competitive state anxiety and its associated areas have been examined in many sports including volleyball and wrestling (Gould et al., 1984), golf (McAuley, 1985) and middle distance runners (Jones et al., 1990). More research is required in other sports to allow greater understanding of the concept of anxiety and its relationship with sport. Multidimensional competitive anxiety has not yet been examined in the sport of horse trials.

Although performance in BHS horse trials depends on both the capability of both the horse and the rider, anxiety may have a significant effect on the rider's performance. High levels of cognitive anxiety may reduce the rider's attention allowing irrelevant cues to crowd the mind. Bad judgement and errors may result perhaps causing a decrease in performance. Increases in somatic anxiety may cause tension between the horse and rider as a result of increases in the rider's muscle tension. This may impair performance particularly in the dressage phase of the horse trial. Low self-confidence may reduce the rider's perceived capability hence causing a decrease in performance.

The antecedents or perceived causes of anxiety in horse trials riders is also a beneficial area of study to aid understanding of the anxiety concept. Possible antecedents include; the rider's perceived ability incorporating their own and horse's ability and level of fitness, past competition experiences such as consistently poor dressage performances or a fall at a certain fence on the cross-country course and also environmental conditions. These factors

will directly affect the anxiety reaction evoked in the rider and hence their subsequent performance in the horse trial.

Examination of the differences in anxiety and antecedents experienced by riders is required, in conjunction with the effect of level of experience. This will provide information and hence suggestions about possible improvements that could be made by a Novice rider to potentially control anxiety and enhance their preparation for a horse trial. Hence research in these areas in horse trials would assist the identification of appropriate mental training strategies and intervention techniques for particular riders, thus optimising their performance.

### 3.3.2 The interaction between the rider and horse

Rider and horse compete as one system during horse trials and other equestrian sports. It is acknowledged that the total performance of the rider and horse 'system' is dependent on the performance of both the rider and the horse (Coles, 1987). It has also been suggested that there is a significant interaction between the horse and rider, whereupon the horse is sensitive to the changes in nervousness and tension of the rider. This can consequently elicit nervousness in the horse, causing the performance of the system to deteriorate (Lockhart, 1990). Anecdotal evidence supports the existence of nervousness and tension in both the rider and the horse separately, however, little empirical evidence supports the interaction between the rider and the horse and the possibility of transfer of tension between them.

The following information provides the evidence for the existence of nervousness and tension in both the rider and the horse. It reports a model developed by the researcher to illustrate the interaction between the rider and horse based on the anecdotal and empirical evidence available and her own experience within the sport of horse trials. This interaction between the rider and horse is examined in Section 5.1.

#### *Horse behaviour*

A study of horse behaviour may occur in the natural environment or in domestic situations where horses are used by humans for leisure activities. Encompassed within the leisure

activities are equestrian sports competitions. Perreault (1991) suggests that the horse's behaviour during rest and training should be monitored daily to examine for signs of physical stress. Behavioural and physiological changes within the horse can support the suggestion of both physical and psychological stress. Therefore, for the competition horse, it is also necessary to monitor the horse in both training and competition settings to assess signs of physical and psychological stress. The indicators commonly assessed by riders and grooms are; vocal communication, body posture and movements, physiological changes and kinetic behaviour.

Vocal communication of the horse can indicate whether it is relaxed or highly aroused by the presence of danger or a threatening situation. The increased level of arousal of the horse causes changes in the type of call the horse makes and can be used to indicate fear, excitement or nervousness (Rees, 1984; Kiley-Worthington, 1987; Fraser, 1992).

The body posture and movement of the horse also changes when the horse becomes nervous or fearful. Specifically, the horse will raise its head, hollow its back, freeze on the spot or move quickly away from the impending danger. Kiley-Worthington (1987) also emphasised the horse's reaction to danger which encompasses contraction of the muscles required to quickly move the horse away from the danger if necessary. The physiological changes occurring in the horse as a result of fear or nervousness include the increased muscle tension, increased heart rate, pupil dilation and sweating. These changes correspond to the activation of the sympathetic division of the autonomic nervous system; the fight or flight mechanism (Fraser, 1992). Kinetic behaviour involves the horse's gait and stride patterns. When the horse experiences stress and nervousness, changes in the gait and stride patterns occur. The horse's movement is adversely affected by the increased muscle tension associated with the stress reaction. The horse's stride becomes shortened and the rhythm of the stride becomes irregular and can result in the lack of engagement of the hindquarters (Lockhart, 1990; Perreault, 1991). This is termed by riders as 'not tracking up'.

Consequently, by monitoring the horse's body posture, movement, physiological changes and kinetic behaviour at competition, it is possible to assess whether the horse is experiencing increased nervousness and tension. Increases in nervousness can detrimentally

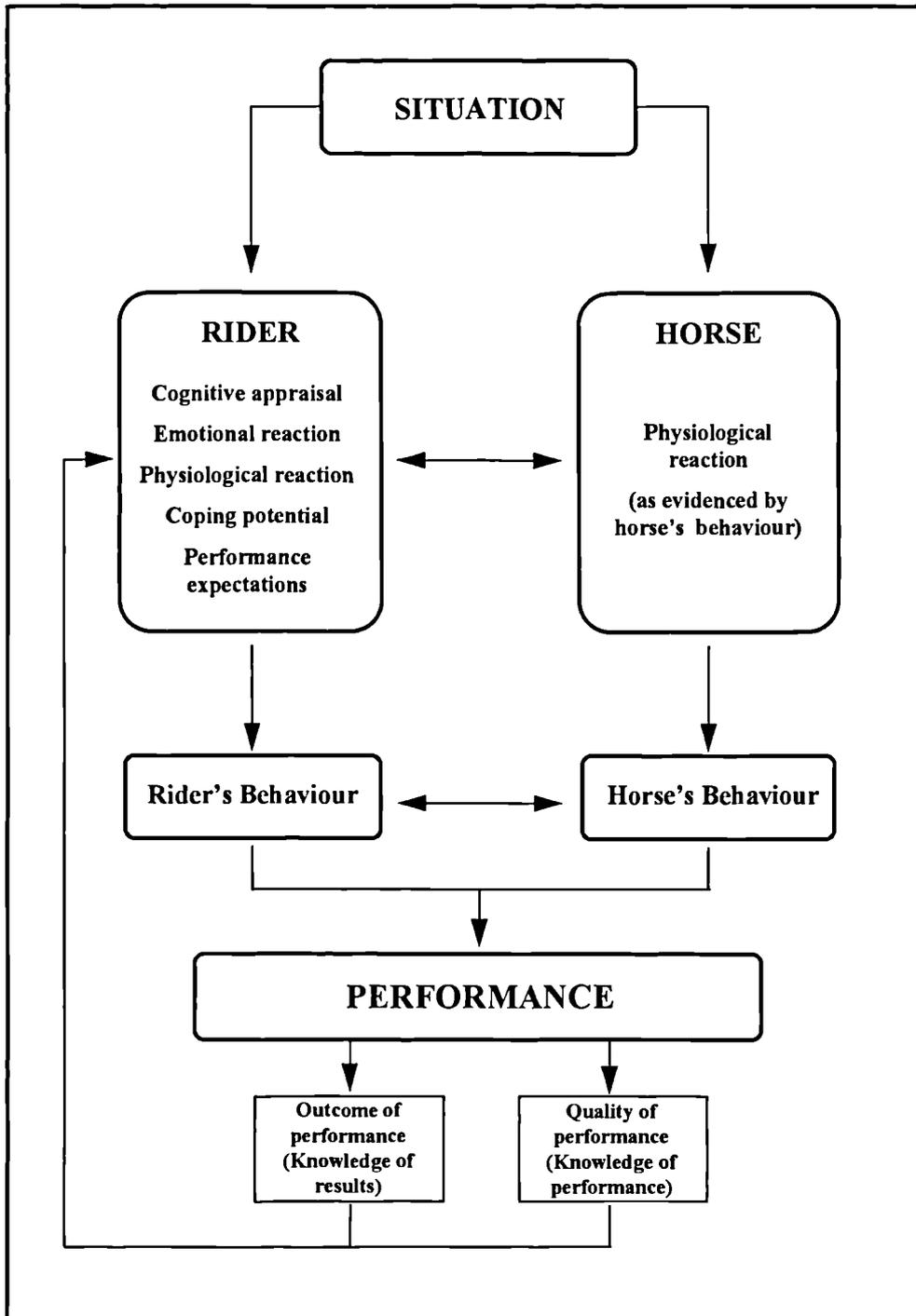
affect the performance of the horse for competition. The identification of nervousness in the horse can potentially cause the rider to worry about the horse's performance, causing negative performance expectations for the competition.

### *The rider and horse interaction*

It has been shown that horses can experience nervousness and exhibit this nervousness through kinetic behaviour and physiological changes in the body (Lockhart, 1984; Perreault, 1991; Fraser, 1992). These changes can cause the performance of the horse to deteriorate (Perreault, 1991). As the performance of the 'system' depends on the performance of both horse and rider, it is necessary to examine the possible interaction between the horse and rider and the subsequent effect on performance.

The aim for riders is to develop the trust, communication and confidence between themselves and the horse and to perform ultimately as one co-operative system (Knox, 1989). The interaction between the horse and rider is dynamic and constantly changing with the rider having to alter his/her body position and aids to maintain the equilibrium between himself/herself and the horse to achieve the desired performance. The horse is also having to adapt its body position and movement in response to the rider's aids and changes in the terrain. This process can be compared to sports consisting of two athletes working together, for example, rowing pairs and tennis, badminton and table tennis doubles. The two athletes must know each other's strengths and weaknesses and work together to produce the best performance as a team. A poor performance from one member of the team can adversely affect the performance of the pair.

Based on view of state anxiety as a multidimensional construct (Borkovec, 1976) and the identification of the individual's interpretation and cognitive appraisal of a situation (Lazarus, 1966; Spielberger, 1989) in the stress process, the researcher developed a model to explain the interaction between the rider and horse. The model incorporates psychological, physiological and behavioural components which combine to form the dynamic and complex relationship between the rider and horse and their performance (Figure 3.3.1).



**Figure 3.3.1:** The model illustrating the dynamic interaction between the horse and rider.

The psychological component of the interaction between the horse and the rider involves the rider's cognitive appraisal of the situation, the emotional reaction experienced by the rider, the rider's coping potential (Lazarus, 1966) and the rider's personality characteristics.

These factors are the same factors affecting an athlete in any sport (Spielberger, 1989; Martens et al., 1990). In equestrian sports, however, you have the added factor of the horse's involvement. Consequently, the rider's appraisal and interpretation of the situation incorporates whether he/she and the horse can complete the task and whether the rider has the coping potential to deal with problems associated with his/her performance and the horse's performance.

The cognitive appraisal has a large impact on the rider's self-confidence for the task. If the perceived challenge of the task outweighs the rider's perceived ability, then anxiety will be experienced by the rider (Csikszentmihalyi, 1975). In some cases, the horse's behaviour and ability might be the sole cause for the rider's appraisal of the situation, for example; the horse uncharacteristically refuses a fence on the cross-country course or the rider perceives the horse does not have the ability to complete a show-jumping course of 3'6" in height. To extend the work by Csikszentmihalyi (1975) it is plausible to suggest that if the perceived challenge of the task outweighs the rider's perception of the horse's ability, then anxiety will be experienced by the rider. The cognitive appraisal is an ongoing process and takes place prior to, during and after the performance.

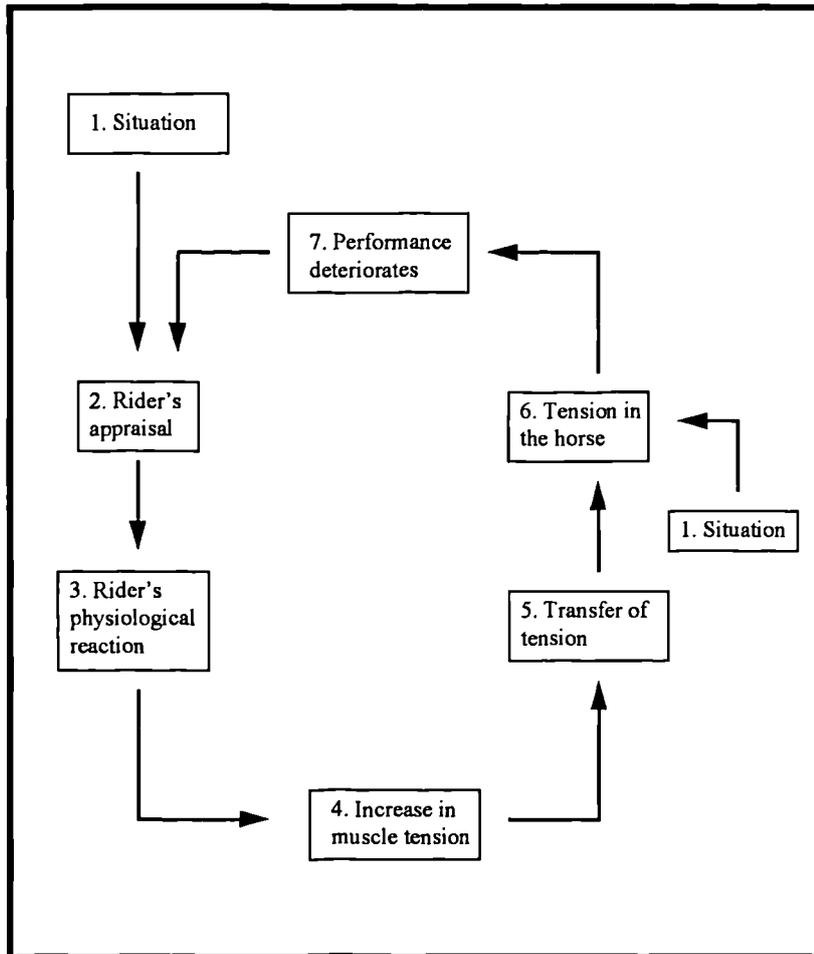
During the assessment of a situation, the rider may experience physiological changes associated with his/her cognitive appraisal. This reaction is the physiological change associated with the activation of the sympathetic division of the autonomic nervous system (Hackfort & Schwenkmezger, 1989). The interpretation of this physiological reaction may be positive (excitement) and/or negative (anxiety). The increased muscle tension associated with the physiological reaction can adversely affect the rider's performance. Specifically, the rider's body position may change and the forces exerted by the rider may increase. These changes can affect the way the horse performs (Lockhart, 1990). The rider is unable to move effectively with the horse, may sit heavily in the saddle and alter the aids applied to the horse (Henriques, 1987). Also, the increased forces exerted on the horse's mouth via the reins may encourage the horse to resist the bit, raise his head and hollow his back hence showing the behavioural indicators of a tense horse (Kiley-Worthington, 1987). In this situation the horse's stride length usually shortens because the horse is unable to perform the correct gait movement effectively (Perreault, 1991). Lockhart (1984) acknowledges

this interaction between the horse and rider and suggests that changes in the rider's sweat, breathing as well as muscle tone provide sufficient stimuli to elicit fear, nervousness or excitement in the horse.

As the rider's cognitive appraisal of the situation is an ongoing process, the rider may interpret the horse's resistance and incorrect movement patterns as negative. Consequently, the rider may become more anxious as he/she perceives the horse's performance as insufficient to produce the required movements for the task completion. Essentially, a vicious circle can be set up between the horse and rider.

The Negative Performance Cycle was developed by the researcher to illustrate the vicious circle between the rider and horse (Figure 3.3.2). In some cases it is not clear whether the muscle tension originated from the rider or the horse. The Negative Performance Cycle encompasses this and incorporates the possibility that the tension between the rider and horse was initiated by the horse becoming tense and nervous in certain situations, for example, unfamiliar surroundings such as a competition site. This tension is exhibited through the horse's behaviour and physiological reactions associated with the fight or flight mechanism and is illustrated by point one leading into point six on the Negative Performance Cycle (Figure 3.3.2) The rider then appraises the performance and may become worried when the performance is below par.

The behavioural component (Figure 3.3.1) encompasses changes in either the rider's or horse's behaviour affecting the performance of the 'system'. Examples include; the rider riding less strongly into fences due to self-doubt, or the horse shying away from certain obstacles which are unfamiliar. Cognitive appraisal of the performance in terms of knowledge of performance and knowledge of results provides the rider with information regarding the how well he/she and the horse performed (Figure 3.3.1). This appraisal has implications for future performance expectations and the perceived readiness of the rider and the horse.



**Figure 3.3.2:** The Negative Performance Cycle.

Houghton-Brown (1995) emphasised that the rider and trainer must analyse all possible causes of stress prior to a competition. Consequently, the rider will be aware of the possible factors affecting his/her own and the horse's performance. Mental training techniques can enable the rider to effectively deal with problems arising prior to, during and after a performance.

The interaction between the rider and horse has been explained in terms of psychological, physiological and behavioural components. It is evident from the information that in certain situations the rider's psychological state can be affected by either their appraisal of themselves, the horse's behaviour, physiological changes and performance in a given situation. The factor that is most important during this process is the rider's interpretation

of the information. Analysis of anxiety within the context of horse trials must take into consideration the rider's cognitive appraisal and interpretation of the themselves and the horse.

### 3.4 Summary

Within the context of horse trials, the analysis of antecedents of anxiety, anxiety and causal attributions are important areas of study. Their measurement and analysis must take into consideration the rider's self-perception the rider's perception of the horse and the interaction between the rider and the horse (see Section, 3.3.2). The information gained from the analysis of antecedents of anxiety and causal attributions will benefit the understanding of anxiety experienced by horse trials riders and hence aid the development of stress management intervention programmes.

## CHAPTER 4

Review of literature - Part 3: Application of stress management on sports performance.

## **4.0 Review of literature - Part 3: Application of stress management on sports performance.**

### **4.1 Introduction**

It has been shown that anxiety is prevalent in sports and can be experienced by athletes as facilitating or debilitating to performance (Alpert & Haber, 1960; Mahoney & Avener, 1977; Jones et al., 1993). For those athletes who experience the negative aspects of competitive state anxiety, the resultant effect on sports performance can be devastating (Hardy, 1990; Martens et al., 1990). There are two possible options to help these athletes; a) reduce the level of anxiety they experience, b) develop a positive attitude to performance and an interpretation of the level of anxiety as facilitative to performance. Stress management techniques can be used to produce these effects and are utilised in multi-modal stress management intervention programmes (Mace, Eastman & Carroll, 1986a; Maynard & Cotton, 1993).

The following sections provide information regarding the utilisation and content of multi-modal stress management intervention programmes within the context of sport. Information about goal setting, cognitive restructuring, positive self-talk and relaxation as stress management techniques is reported and methodological issues with stress management research are highlighted.

### **4.2 Stress Management Programmes**

The research into competitive anxiety includes many areas; the antecedents of anxiety (Gould et al., 1984; Jones et al., 1991), sport achievement orientation and state anxiety (Swain & Jones, 1992), the clarification of the anxiety-performance relationship (Sonstroem & Bernardo, 1982; Burton, 1988), intensity and direction dimensions of competitive state anxiety (Swain & Jones, 1993), gender differences in anxiety (Swain & Jones, 1991), and anxiety and causal attributions (Sanderson, 1989). As a result of this research and with the identification of the problems related to competitive state anxiety individuals experience, other areas of research have developed. Within sport

psychology, research into the area of stress management has been developed; helping athletes deal effectively with the anxiety they experience (Crocker et al., 1988; Maynard & Cotton, 1993).

Various stress management programmes exist; Stress Inoculation Training (SIT; Meichenbaum, 1985), Anxiety Management Training (AMT; Suinn, 1972), Cognitive-Affective Stress Management Training (SMT; Smith, 1980). Both SIT and SMT have been utilised in sport contexts and incorporate in the programme an *educational phase*, relating to the stress reaction, *an introduction phase*, instruction and training in stress management techniques such as relaxation, self-reinforcement strategies, *a practice phase*, practising techniques in increasingly stressful situations, *and an evaluation component*, assessing the effectiveness of the programme (Ravey & Scully, 1989; Crocker, Alderman & Smith, 1988, Mace & Carroll, 1985; Mace, Carroll & Eastman, 1986a).

It has been recognised that the education of the athlete in the areas of stress management and the underlying psychological principles is important. Ravizza (1989) emphasised the need for increasing the athlete's awareness. The basis of stress management programmes is the individual's recognition of the need to do something to cope or gain control in a stressful situation.

The potential benefits of a stress management programme include the reduction of anxiety, increase in self-confidence, increased ability of the individual to cope and increased levels of self-esteem. Bandura (1977) identified the effect of self-efficacy on the performance of a task, such that, the individuals' belief in their ability increased the possibility of success on the task. Consequently, stress management programmes may also incorporate cognitive strategies to alter the individual's belief about his/her own ability. Such strategies include the use of cognitive restructuring (Meichenbaum, 1985). The aim of most stress management programmes such as SIT and SMT is to nurture and develop coping skills within individuals. Meichenbaum (1985) emphasised that the aim of SIT was to resolve specific immediate problems but also to develop techniques that the individual would be able to apply to future difficulties.

Consequently, it is the aim of some programmes to encourage the development of stress management skills which can be utilised in sport and transferred to other areas of life. Such programmes emphasise a Life Development Intervention (LDI) approach (Danish, Petitpas & Hale, 1993).

In the development of stress management programmes, several factors need to be considered. Meichenbaum (1985) emphasised caution on the development of programmes. He suggested guidelines for the development of a programme in a clinical setting. These guidelines can easily be applied to the development of a stress management programme in a sporting context.

Initially, the programmes must be *sensitive to the individual needs*, and consequently, need to be individually tailored to suit the athlete. The programme must *foster flexibility*, by developing the individual's ability to adjust his/her coping technique to the situational demands, changing contexts and goals. *Graded exposure* to the stressful situations is required. By introducing techniques such as stress inoculation and desensitisation, the athlete's self-confidence and perceived control can be developed. Thus, techniques should be developed in training situations and then gradually employed in increasingly more stressful situations. The programme requires an aspect of *direct instruction*, where athletes receive informed training regarding the rationale for stress management training. It is important that athletes are able to collaborate in the development, implementation and evaluation of the coping techniques. They need to be educated in the reasons why and how the techniques can help. Client collaboration will reduce the resistance of the athlete to the programme and generate feelings of self-worth and motivation. Encompassed in the direct instruction is the development of generalisation of techniques. Generalisation, or the application of coping techniques to a variety of settings must be identified and planned within the programme. *Feedback* to the athlete should involve the successes of the techniques. Meichenbaum (1985) also recognised the need to encourage athletes to make self-attributions regarding the positive changes that have occurred through the programme. This process can be assisted by the evaluation of progress using techniques such as the performance profile (see Section 7.1).

When developing a stress management programme specifically designed to address the high levels of competitive state anxiety, several researchers have identified the need for targeting the intervention towards the specific component of anxiety predominantly experienced. Hence, the intervention is tailored in line with the development of multidimensional state anxiety theory; the 'matching hypothesis' of anxiety reduction (Martens et al., 1990; Maynard & Cotton, 1993). The principle of this hypothesis is that the treatment may be more successful if it is directed at the system most activated by the stressor, either cognitive or somatic anxiety. For example, intervention techniques such as, rational emotive therapies, cognitive therapies and thought stopping should be more effective in reducing cognitive anxiety, whereas, relaxation techniques, systematic desensitisation and biofeedback are expected to reduce the effects of somatic anxiety (Martens et al., 1990).

Maynard and Cotton (1993) studied the effect of matched intervention techniques for field hockey players. Their findings supported the matching hypothesis where somatic anxiety was significantly reduced using an applied relaxation intervention. Cognitive anxiety was significantly reduced by a positive thought control intervention technique. They also found that both the applied relaxation technique and the positive thought control technique produced reductions in the cognitive anxiety and somatic anxiety respectively. They concluded that the anxiety-reduction techniques directed at one system also facilitated reductions and relaxation in the other system to a lesser degree, suggesting the cognitive and somatic anxiety systems do interact. This supports the identification of separate yet interacting components of multidimensional anxiety (Borkovec, 1976).

A further development in anxiety theory was the identification of the direction dimension, where individuals may perceive anxiety as either facilitative or debilitating to performance (Alpert & Haber, 1960; Jones, 1991; Jones & Swain, 1992). Maynard, Hemmings and Warwick-Evans (1995) warned that the development of stress management intervention programmes must take into consideration the athlete's perception of the components of anxiety as facilitative and debilitating before employing the matching hypothesis. It is possible for athletes to report high levels of

cognitive or somatic anxiety as facilitative to performance. Interventions targeted at the dominant anxiety system without the knowledge of the subject's perceptions of that anxiety may actually hinder future performance.

When an athlete embarks on a stress management intervention programme or any mental training programme, their adherence to the programme becomes an important issue. Bull (1991a) acknowledged the importance of adherence to mental training programmes. He indicated that the most significant predictor of adherence was self-motivation. Other predictors were the need to individualise mental training programmes and techniques. Strategies to increase the athlete's intrinsic motivation include; athlete and sport psychologist collaboration on the development of the programme, athlete empowerment, athlete education of the underlying psychological principles and encouragement for self-evaluation and monitoring during the intervention programme.

Ravey and Scully (1989) indicated that an important yet neglected aspect of stress management intervention programmes was the evaluation of their effectiveness. In particular, there have been few studies that have attempted to assess the effectiveness of SIT and SMT and few of the techniques employed in sport contexts have been empirically validated. Meyers (1995) also stated lack of experimental evaluations of sport psychology interventions using elite athletes. Maynard and Cotton (1993) acknowledged the need to test the efficacy of techniques used by sport psychologists in the applied setting and suggested that, currently, many interventions seem to be based on little more than intuitive appeal. The evaluation of the effectiveness of stress management intervention programmes must incorporate an analysis of the changes in psychological constructs, the performance of the individual and also the general feelings of well being and self-efficacy of that individual as a result of the intervention.

In summary, the development of stress management intervention programmes must adequately address the specific needs of the athlete. It should incorporate an educational phase as well as the training and practice of the techniques prior to their implementation in competition settings. The techniques should be situation-specific but

also be generalised so the athlete can utilise the techniques in all situations. To motivate the athlete and encourage adherence to the programmes it is important for the athlete to be part of the development process regarding the techniques, their implementation and evaluation. The programme also requires evaluation of its effectiveness on the performance and the psychological well being of the athlete.

### 4.3 The stress management intervention techniques

#### *4.3.1 Goal setting*

The use of goal setting programmes to enhance motivation and build confidence has been widely documented (Harris & Harris, 1984; Gould, 1992). The goal setting programme provides important feedback to the subject regarding their progress on a certain task. Athletes gain confidence because they can objectively see the progression through short term and intermediate term goals. They can monitor their preparation for a competition and adapt a training schedule to ensure they are optimally prepared at the right time. Goals can be used to facilitate performance enhancement and reduce the athlete's anxiety associated with a lack of preparation or uncertainty about the level of performance they have achieved through training.

Goal setting theory was developed by Locke (1968) to develop an understanding of task motivation and incentives. Goal setting has been used and researched mostly in organisational and industrial settings (Latham & Baldes, 1975) and laboratory tasks (Locke & Bryan, 1969; Jackson & Zedeck, 1982). A goal is defined as the task the individual is consciously trying to do. The underlying principle for goal setting theory is that an individual's conscious intentions regulate his actions (Latham and Yukl, 1975). Several factors affect the individual's performance of the task and hence attainment of a goal including goal difficulty, goal specificity, and satisfaction. These will be explained in the following text.

The most significant factor for consideration in the attainment of goals is the conscious acceptance of those goals by the person (Latham & Yukl, 1975). Goals which are imposed and have not been accepted by individuals rarely improve performance. This

has important implications for the use of goal setting by coaches to improve athletes' performances.

Specific goals direct the individual's effort more effectively towards the goal attainment than vague, general or "do your best" goals (Jackson & Zedeck, 1982). The difficulty of the goal set also has implications for the performance of an individual. Locke (1968) indicated that difficult or challenging goals produce a greater improvement in performance than moderate or easy goals (Locke & Latham, 1985). This principle has been supported by several studies (Latham & Baldes, 1975), however, it is suggested that difficult goals will be perceived as challenging if the individual has a high degree of self-assurance (Latham & Yukl, 1975). Jackson and Zedeck (1982) performed a laboratory experiment utilising no goals, "do your best" goals, specific easy goals and specific hard goals. Performance was significantly increased on the specific goals (easy and hard) compared to the no goals or do your best goals. There was, however, no difference between easy and hard specific goals. The implications for athletes, coaches and sport psychologists are to develop goals which are realistic and challenging for the individual.

Since the development of Locke's (1968) theory, goal setting has been applied to sporting situations. There are however, few empirical studies in comparison to the number of practitioners who use goal setting in a consultancy role. It is important to evaluate the empirical evidence of goal setting to establish its validity and reliability in sport.

Weinberg, Burton, Yukelson and Weigand (1993) investigated the practices of collegiate athletes with regard to goal setting. Descriptive results indicated that virtually all athletes practised some type of goal setting to help enhance their performance and that they found their goals to be moderately to highly effective. Barnett and Stanicek (1979), on the basis that self-set goals were superior to experimenter set goals, conducted an experiment using two groups of subjects learning a new skill; archery. A control group received only instruction and discussion workshops, whereas the experimental group received the instruction, the discussions

during which they were encouraged to set specific numerical and verbal goals using a printed goal-setting sheet. The results obtained after a 10 week archery course showed the goal-setting group had significantly higher archery scores than the group with no specific goal setting. The results provided evidence to support the theory that goal setting increased motivation and maintained task interest.

Weinberg, Bruya and Jackson (1985) investigated the effect of four different goal setting conditions upon performance, namely; a) short term goals, b) long term goals, c) short term plus long term goals and d) do your best goals. They found no significant differences between the groups in terms of performance on a three minute sit up test. Possible reasons for the lack of differences were suggested to be firstly, subjects were setting goals themselves in addition to the ones identified by the experimenters and secondly, the groups were highly motivated. Consequently, all groups may have been increasing their effort to reach their maximum. Thirdly, the 3 minute sit up task gave subjects immediate feedback regarding their performance level via physiological and physical indices. This may have overrode any thoughts relating to attainment of goals. Finally, Weinberg et al. (1985) suggested that the goals in this study were set by the experimenter rather than self-set. They lacked flexibility which possibly reduced their effectiveness.

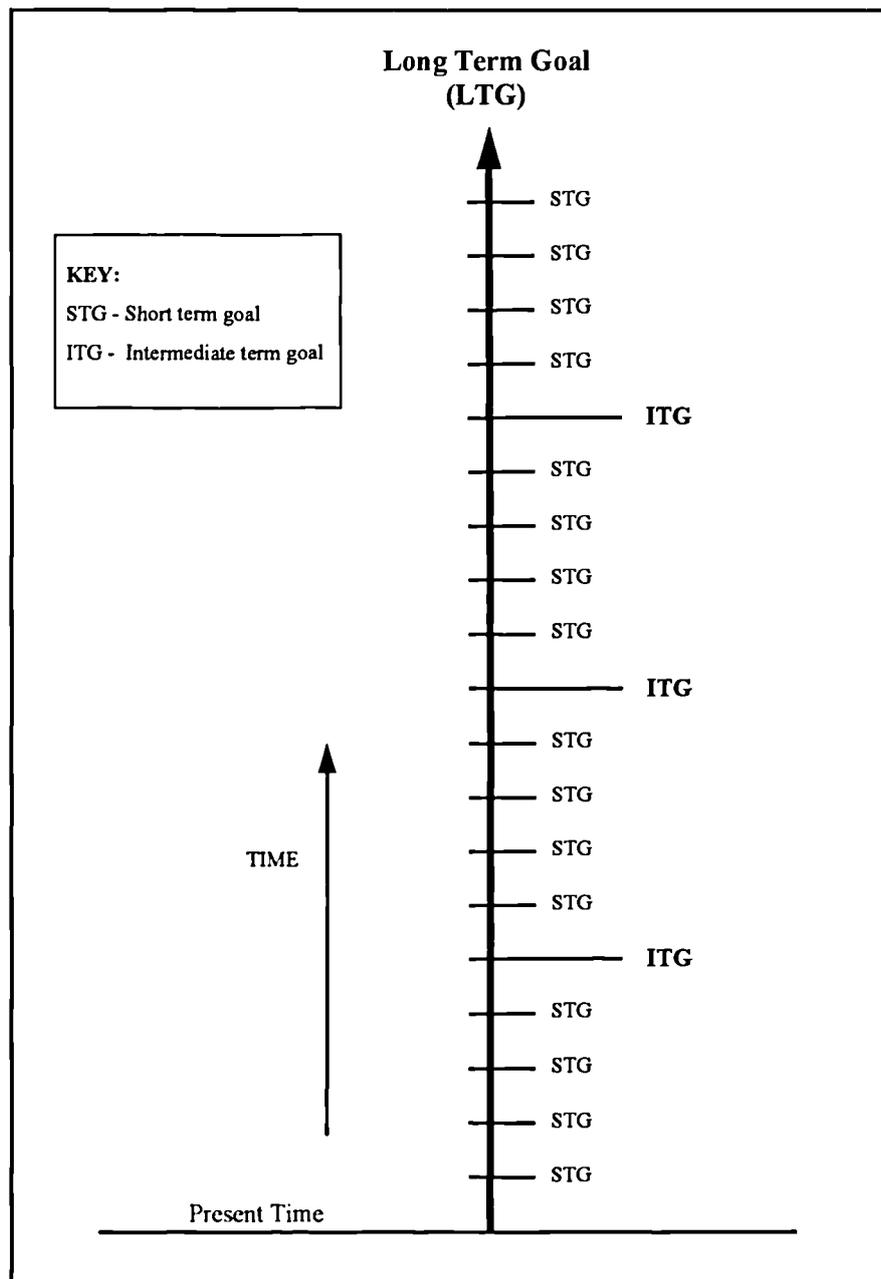
Hall and Byrne (1988) randomly assigned subjects into one of four experimental conditions; a) long-term goals, b) long-term goals plus experimenter set intermediate goals, c) long-term plus subject-set intermediate goals and d) do your best goals. The results indicated that groups with sub goals performed significantly better than the group with do your best goals. The long term goals only group was not significant but the trend showed that performance of this group was better than the do your best goals group. Hall and Byrne (1988) emphasised the results supported the use of sub-goals in addition to long term goals to improve performance.

Miller and McAuley (1987) investigated the effects of goal setting on basketball free-throw self-efficacy and performance. Groups identified were; goal training (GT) and no-goal training (NGT). The goal setting programme lasted five weeks. Results

indicated that the GT group reported increased self-efficacy and increased perceived success yet no differences were obtained for the free-throw accuracy. They suggested that the lack of differences in performance may have been due to skill limitations of the subjects. However, the performance results were more consistent and this was suggested to be the result of a stabilising effect of goal setting. Consequently, it was argued that a technique which helps to produce more consistent performances must have some use in a sporting context.

Locke and Latham (1985) identified several important considerations when applying goal setting to athletes namely; a) specific goals direct activity more effectively than vague or general goals, b) difficult or challenging goals produce better performance than moderate or easy goals provided the athlete perceives she/he has adequate ability for the goal, c) short term goals can be used as a means of attaining long term goals, d) goal setting only works if there is timely feedback showing performance or progress in relation to the goal, e) goals must be accepted in order to be effective, goal attainment is facilitated by a plan or strategy and finally, f) competition is an important element of sports and can be viewed as a form of goal setting. Harris & Harris (1984) also emphasised the need to ensure goals are flexible enough to allow for revision and change in case of injury, failure to achieve a goal or competition postponements and cancellations.

A goal setting plan can be used to show progression and maintain motivation (Harris & Harris, 1984). The goal setting plan thus adopts both short term and long term goals as a strategy for enhancing motivation and self-efficacy (Locke & Latham, 1985). Long term goals are the goals an athlete ultimately wants to achieve and could range from a club competition to the Olympics. Such goals are often too far in the future for many athletes to maintain motivation until their achievement. Consequently, intermediate or monthly goals may be developed to provide records of achievement at regular intervals prior to the long term goal (Figure 4.3.1). Short term or weekly goals are developed to provide small, regular achievements which can be used as stepping stones to achieve the intermediate and long term goals (Kubistant, 1986).



**Figure 4.3.1:** The structure of a goal setting programme showing short, intermediate and long term goals.

The benefits gained by an athlete using a goal setting programme include; increased motivation, direction of effort towards goals, increased self-confidence, increased perception of control over training and situation and increased self-efficacy (Bandura, 1982; Harris & Harris, 1984; Gould, 1993).

#### 4.3.2 *Cognitive restructuring*

Individuals who experience state anxiety often report negative, unpleasant thoughts associated with the competition (Borkovec, 1976; Spielberger, 1989). These thoughts can be damaging to the individual's performance by reducing the information processing space available for a task and interfering with other cognitive activity (Hamilton, 1983), distracting the individual's attention away from relevant cues (Nideffer 1980; Landers, 1980) and increasing concern about the performance outcome and doubt in his/her ability to perform adequately (Liebert & Morris, 1967; Martens et al. 1990). The negative self-statements associated with the worry are very powerful and can often lead to a self-fulfilling prophecy (Kubistant, 1986).

Cognitive restructuring (encompassing Thought Stopping and Positive Self-Talk) is a technique to help an athlete develop a more positive attitude with regards to their own performance and performance expectations. It aims to increase the athlete's awareness of the negative thoughts and stop these thoughts from persisting (Harris & Harris, 1984; Kubistant, 1986). The technique then re-directs the negative energy associated with the negative self-statements towards the performance with the athlete focusing on positive task-relevant cognitions regarding their ability, effort and performance (Harris & Harris, 1984; Boutcher & Landers, 1988).

There is little research implementing cognitive restructuring as a stress management intervention technique on its own, however, studies have incorporated it with other techniques as part of a multi-modal stress management intervention programme (Mace, Carroll & Eastman, 1986a; Crocker, Alderman & Smith, 1988; Maynard & Cotton, 1993). Multi-modal stress management programmes form a holistic approach to the treatment of anxiety and aim to reduce somatic and cognitive components of multidimensional anxiety.

Meichenbaum's (1985) stress inoculation training (SIT) incorporates cognitive restructuring designed to make individuals aware of the role cognitions and emotions play in causing and maintaining stress. The individual's process of a) awareness of negative thoughts and their effect on emotions and performance b) self-monitoring of

negative thoughts and c) the assessing the validity of these statements, is emphasised in SIT (Meichenbaum, 1985). The effects of SIT were monitored in abseiling (Mace, Carroll & Eastman, 1986a). They reported that the SIT group showed significantly less self-reported anxiety and stress and less behavioural signs of distress than the control group.

Smith's (1980) cognitive-affective stress management training (SMT) programme was implemented into the training of high-performance youth volleyball players (Crocker et al., 1988; Crocker, 1989). SMT incorporated cognitive restructuring and relaxation used to control emotional arousal. Within the programme, eight 1-hour modules were administered to the athletes (Crocker et al., 1988). The sessions that specifically related to cognitive restructuring included; the role of cognitive mediation and identifying trigger thoughts and the role of irrational beliefs and developing substitution statements. The results indicated that the treatment group reported fewer negative thoughts in response to video-taped stressors and had better performances in the service reception than the control group, thus providing support for the use of SMT in sporting situations. Further work in this area, found no significant effect of SMT between the treatment and control group of volleyball players (Crocker, 1989). However, Crocker (1989) suggested problems with sample size, research design and the possibility that subjects employed active coping skills only after a specific level of anxiety has been reached could account for the lack of significant findings. Research to assess the effectiveness of SMT remains a challenge (Crocker, 1989).

Maynard and Cotton (1993) incorporated both cognitive and somatic intervention techniques into their multi-modal stress management intervention programme to investigate its effect on Collegiate male hockey players. The cognitive strategy utilised Positive Thought Control (PTC, Suinn, 1987) and covered three main areas; using negative thoughts in a positive way, controlling negative thoughts and training positive thoughts (Maynard & Cotton, 1993). The group receiving the positive thought control treatment experienced a significant reduction in cognitive anxiety and also somatic anxiety. The group receiving somatic intervention experienced a reduction in the targeted somatic anxiety and also reported a decrease in cognitive anxiety by 33%. The

results highlighted the interaction between the two components of the anxiety system and suggested that anxiety-reduction techniques directed at one system also facilitated a reduction in the other but to a lesser degree (Maynard & Cotton, 1993).

The results obtained by Maynard and Cotton (1993) provide support for the use of multi-modal stress intervention programmes which pre-dominantly target a pre-determined anxiety component for individuals but which also facilitates a reduction in the other component of anxiety. Cognitive restructuring was a cognitive strategy incorporated in the stress management intervention programme in this thesis to reduce the negative worry associated with competitive state anxiety.

#### *4.3.3 Positive self-talk*

Positive self-talk (positive self-statements; affirmations) involves an individual's conscious acknowledgment of his/her abilities, qualities and skills that he/she brings to a situation (Kubistant, 1986). If the statements are rehearsed and more importantly, believed in, they can enhance an athlete's positive attitude, counteract negative thoughts and self-doubt and focus his/her efforts effectively towards performance.

Positive self-statements can be adapted to suit any aspect of training, performance and competition. Consequently, they may be adapted to suit the specific needs of an athlete. For example; positive self-statements to motivate the rider during intense training sessions or positive self-statements pre-competition to boost self-confidence and combat negative anxiety effects.

As with cognitive restructuring, positive self-talk has usually been used as one technique in a multi-modal stress management intervention programme (Crocker et al., 1988; Crocker, 1989; Maynard & Cotton, 1993). It has been used in conjunction with cognitive restructuring to combat the negative worry and self-doubt associated with cognitive anxiety. Findings have indicated that the use of positive self-talk in conjunction with cognitive restructuring is effective in reducing negative cognitions relating to performance (Maynard & Cotton, 1993).

Kubistant's (1986) model of positive affirmations incorporating; basic self-statements, activity-specific self-statements and process self-statements encourage the individual to acknowledge his/her positive qualities in relation to ability, technique, tactics and physical factors. The basic self-statements relate to the individual's good qualities and positive choices they have made regarding performance. Activity-specific statements are utilised to remind the individual of the specific skills and attributes needed for good performances and reinforces these skills possessed by the athlete. They are reminders of the individual's competence in a situation. The process statements are positive words or phrases the individual says to him/herself during a performance. They focus the individual's attention on the task and direct action (Kubistant, 1986).

Positive self-statements can be applied to general situations, training situations, pre-competition and during competition as required by the subject. The positive self-talk was implemented in the SMIP in this thesis to develop a positive attitude and self-image, boost self-confidence and combat the negative effects of competitive state anxiety.

#### *4.3.4 Relaxation Techniques*

Various techniques have been developed to produce relaxation in individuals, thus reducing tension and enabling the individual to gain control and regulate state anxiety responses (Harris & Harris, 1984). Relaxation techniques which address somatic anxiety responses employ a procedure of systematically tensing and relaxing all the major muscle groups in the body (Progressive Muscular Relaxation (PMR), Jacobson, 1938). This process utilises the principle of neuromuscular relaxation and heightens the individual's awareness of tension through kinesthetic control enabling them to reduce tension experienced. Relaxation procedures that target cognitive anxiety focus on the control of mental processes and efferent nerve control (Harris & Harris, 1984). These techniques include meditation and imagery-based relaxation techniques, which employ a dissociative strategy from the stressor. A major component of relaxation techniques is a focus on breathing. This provides a cue and a focus for the individual's attention and attends to both somatic and cognitive anxiety symptoms by reducing the heart rate and focusing the athlete's attention away from worrying thoughts.

Relaxation techniques have formed part of multi-modal stress management programmes (Houghton, 1991; Maynard & Cotton, 1993). In the application of Smith's (1980) cognitive-affective stress management training to sport, Crocker (1989) incorporated relaxation and meditation but did not find a reduction in somatic anxiety in volleyball players. Houghton (1991) implemented a multi-component intervention with an Olympic archer which incorporated training in progressive relaxation and visualisation. The results indicated an improvement in the subject's performance following the intervention programme. Houghton (1991) emphasised that the results appeared to attest to the benefits of the programme, however, it should be recognised that other factors may have contributed to the improvements.

An applied relaxation technique has been utilised to reduce somatic anxiety (Maynard & Cotton, 1993). This technique incorporated two main purposes; primarily to enable the athlete to recognise the early signs of anxiety and secondly, to help the athlete learn how to cope with the anxiety so it does not have a detrimental effect on performance. The reduction in somatic anxiety of field hockey players following an applied relaxation (somatic technique) supported the use of applied relaxation techniques in stress management intervention programmes to combat anxiety effects (Maynard & Cotton, 1993).

Appropriate imagery-based or progressive muscular relaxation techniques were employed for each subject in this thesis. This was based on the subject's perception of a technique as effective. The aim of the technique was to reduce worry and tension associated with the competitive state anxiety reaction and enable the riders to *gain control* of their thoughts and feelings.

The use of multi-modal stress management intervention programmes enables the negative effects of anxiety to be targeted by a holistic method incorporating both cognitive and somatic strategies. The multi-modal SMIP also has the advantage that it can be individualised to benefit the subject with certain techniques aimed at a particular aspect of the subject's competition experience.

#### 4.4 Multi-modal stress management intervention programmes and horse trials

This thesis incorporates the use of multi-modal stress management intervention programmes within the context of horse trials riders. The SMIP is anticipated to reduce the negative effects of competitive state anxiety experienced by the rider and develop a positive perception of anxiety and a positive attitude for performance.

The performance in horse trials depends on the capability of both rider and horse together. An interaction between the rider and horse can cause dynamic changes to the performance during competition (see Section 3.3.1 and 3.3.2). It is envisaged that with psychological stress management skills the rider will be able to control his/her state anxiety and reduce the negative effects on his/her performance. The rider will also be able to control the possibility of transfer of tension to the horse therefore controlling the build up of tension in the horse. Finally, the rider will be more able to cope with problems arising from the horse's performance and reduce the negative effects of these anxiety inducing antecedents. Thus, the SMIP will aim to provide riders with skills to control their performance contribution and control possible effects of their performance on the performance of the horse.

#### 4.5 Collective Case Studies

A case study is a strategy for undertaking research involving empirical investigation of a particular phenomenon within its real life context using multiple sources of evidence (Robson, 1993). Case studies involve the researcher acquiring knowledge of an instance, event, circumstance or patient under treatment. The case study has been used widely in professional and practical fields to provide detailed information of the topic under investigation.

The use of single-subject case study designs has increased considerably in recent years, particularly in the areas of experimental and applied analysis of human behaviour (Kratochwill, 1978; Morley & Adams, 1989; Robson, 1993). However, there has been

controversy as to the relevance of case study designs. Some researchers have dismissed the case study approach as lacking generalisation and external validity (Hamel, Dufour & Fortin, 1993). They provide results and observations that are specific only to the individual or situation under study. However, as suggested by Hersen and Barlow (1976), functions of a case study are to acknowledge individual differences, identify important areas for future research and generate new hypotheses which can then be tested experimentally.

Group analysis can provide valuable information regarding psychological factors affecting performance and human behaviour and allow researchers to make generalisations to the population. However, problems have also been identified with group analysis. When analysing human perceptions, emotions and/or behaviour, it is inadequate to make assumptions about the general population based on group analysis. Hersen and Barlow (1976) emphasise that in the analysis of changes in human behaviour, the individual is of paramount importance. In group designs, data is averaged across the group and analysed statistically to establish whether the difference between the groups or between different test conditions on the same group of subjects, is statistically significant or purely due to chance. If the difference between the groups or between the test conditions is not significant, individual differences may actually be masked and hence important information regarding that individual would be overlooked. This error occurs in applied sport psychology where individuals differ greatly in their perceptions and thoughts regarding particular events and situations.

Dunn (1984) emphasised that when such analytical techniques are used, and data is combined across subjects, factors or dimensions are extracted. These factors are then assumed to reflect psychological constructs underlying subjects' perceptions. Data obtained from such a sample would not represent any one athlete in the group let alone the group as a whole. The results and conclusions drawn would not relate to an individual in the group or be transferable to the whole population, thus lacking internal and external validity. Dunn (1994) queried the level of class homogeneity that a researcher could confidently combine data across subjects to produce a group profile.

To provide evidence that a particular treatment or condition has produced a certain result during an experiment, researchers have used simple two-group design experiments (Robson, 1993). Problems arising with this method are very important considerations for the applied Sport Psychology researcher. It is very difficult to effectively match subjects to the experimental group. Robson (1993) highlights this problem and differentiates it from the matching criteria used in 'true' or 'randomised' experiments; where the researcher identifies a matched pair of subjects and assigns one member of the pair to each group (experimental and control). In the previous case, the researcher attempts to find subjects who match the subjects receiving a treatment and this approach can threaten the internal validity with a process called 'regression to the mean'. This threat is always present when matching subjects without random assignment, however, it is particularly noticeable in situations where the research involves a treatment to assist subjects with difficulties or where a disadvantage is being assessed (Robson, 1993).

The use of single-subject designs is beneficial for many research areas, particularly applied sport psychology research which involves psychological profiling of athletes, identification and implementation of mental training intervention and subsequent evaluation of the effectiveness of the treatments. Wollman (1986) stated that single-subject designs allowed the detection of successful effects which might otherwise be masked in a non-significant group design. Individual performances can be examined to assess the subject characteristics and/or other factors that led to the performance outcome and whether an improved (reduction in debilitating factors) or decreased performance is observed.

An major advantage of case study or single-subject designs is the monitoring of individual's cognition, perceptions and behaviour which can provide detailed information for the development of an individualised intervention programme for that particular athlete.

“...experiments with single-subject behavioural monitoring lend themselves well to tailoring specific...programmes for individuals engaged in real-life athletics”  
Wollman (1986, p. 136)

Case study designs usually incorporate an analysis of an individual case or subject. Robson (1993) emphasised the possibility to incorporate multiple case studies which involve several individual cases. This design is more complex but allows the researcher to study several different subjects at the same time and employ the same research methods for each subject. The study of multiple case studies is sometimes termed collective case studies. To assess the effectiveness of the intervention without encountering the problems associated with matched control subjects, three collective case studies have been used in this research (Hersen & Barlow, 1976; Murphy & Bryan, 1980).

The use of case study designs and qualitative research in sport psychology has enhanced our understanding of the psychological experiences of athletes (Weinberg et al., 1993). Mace, Eastman and Carroll (1986b) implemented a stress inoculation training (SIT) programme into the training of a young female gymnast of regional squad potential to help her regain her form. Recorded interviews and analysis of pre- and post SIT interviews revealed that the SIT had been successful. The coach of the gymnast endorsed this view and reported an improved attitude to training and rapid progress in skill learning.

The analysis of nine male slalom canoeists incorporated case study design (Males & Kerr, 1996). The research incorporated the analysis of stress-related emotions and performance in a time series model to make comparisons between each subject's worst and best performance of the season. The results indicated that the good performances were preceded by low discrepancies between felt and preferred arousal levels.

Qualitative assessment of the psychological constructs relating to sports performance has also enhanced our knowledge of the sport experience. Gould, Eklund and Jackson (1992) incorporated a analysed qualitative information relating to a series of questions to examine the thoughts and affect occurring during competition of Olympic wrestlers. Results indicated that during best matches, wrestlers were extremely confident, totally focused and optimally aroused. The athletes focused on clear tactical strategies. During

worst matches, the wrestlers were not confident, experienced task irrelevant cognitions and deviated from tactical strategies.

Gould, Jackson and Finch (1993) analysed in-depth interviews regarding the experiences of US National Champion figure skaters. Both positive and *negative* experiences were identified such as; difficulties defending a championship, increases expectations and responsibilities, athletic injuries. They concluded that the research methodology provided a great insight into the experiences of the national skaters. However, some methodological problems were highlighted; specifically, the limitations of the telephone interview, the potential for memory decay in retrospective recall and the fact that recall may have been influenced by success.

It has been suggested that the use of both qualitative and quantitative research methods can provide valuable information (Jick, 1979; Dunn, 1994). Triangulation is a method by which several methodological strategies can be used in conjunction with each other. Jick (1979) emphasised that qualitative and quantitative methods should be viewed as complimentary rather than as rival strategies and thus allow researchers to be more confident of their results. Consequently, in-depth interview analysis can support the findings of questionnaires and vice versa. The use of self-report measures and self-monitoring by the athlete can support the findings of researcher driven strategies and so on. The stress management intervention study in this thesis utilises in-depth interview analysis, validated questionnaire scores and self-rating of personal constructs to embrace a triangulation approach.

Problems are inherent in case studies, triangulation methodology and actual data collection technique such as *interviews, questionnaires, self-report measures*. Case studies provide information which is difficult to generalise to the whole population. Kennedy (1979) suggested that to increase the external validity of case study findings by increasing the number of replications of the case study. Hersen & Barlow (1976) reported the need to ensure the same instructional sets were implemented across subjects and across different phases of the experimentation to increase the validity of self-report and self-monitoring measures. Martens et al. (1990) introduced instructions

for subjects completing the Competitive State Anxiety Inventory-2, to reduce the effects of social desirability. The potential problems associated with the conduction of a semi-structured interview are numerous but can be reduced (for a detailed analysis of interviews, see Robson, 1993).

In summary, the benefits of collective case studies involve the depth of data obtained for the case studies which can enhance the researchers understanding of a sport psychology construct under investigation. The utilisation of three collective case studies enables the assessment of the effectiveness of the intervention without the problems associated with matched control subjects by undertaking inter-case study comparisons. The triangulation approach enables a multi-method strategy to be adopted incorporating both qualitative and quantitative methods. The information from these data collection methods enables a holistic in-depth picture of the subject to be developed. Consequently, a detailed analysis of the individual's experiences during sport competition can be assessed.

#### 4.6 Summary

The literature presented in Chapters 2, 3 and 4 provides information regarding the research into multidimensional competitive state anxiety, factors associated with multidimensional competitive state anxiety and the use of stress management intervention programmes to combat the negative effects of anxiety on performance. The aims of this thesis are i) to analyse multidimensional competitive state anxiety and its effect on riders' performance in horse trials, ii) to investigate the antecedents of anxiety and the attributions made by riders after competition and iii) to design, implement and assess the effectiveness of stress management intervention programmes on psychological variables and performance of BHS horse trials riders.

The study of multidimensional competitive state anxiety will enable the researcher to make recommendations for the provision of stress management intervention for riders. The utilisation of multi-modal stress management intervention programmes can aid the development of psychological skills to help an athlete reduce and cope with

competitive state anxiety in sport. Goal setting, cognitive restructuring, positive self-talk and relaxation techniques have been shown to be successful in reducing both cognitive and somatic anxiety and increasing self-confidence. To assess the effectiveness of intervention techniques, multiple baselines designs enable the researcher to examine changes in psychological constructs and behaviour in several case studies. This research design omits the problems associated with designs involving matched control subjects.

Due to the interaction between the horse and rider, and the contribution of the riders performance to the performance of the 'system', the stress management intervention programme can be targeted at the riders psychological experiences. Consequently, the rider develops skills to reduce or control anxiety and produce a positive attitude for performance of one half of the performance 'system'. The rider is able to cope with problems arising from the horse's behaviour and performance, thus effectively breaking the Negative performance cycle, reducing the negative effects of competition and positively influencing the interaction between the rider and horse.

## CHAPTER 5

Investigation 1: Multidimensional state anxiety in horse trials.

## 5.0 Investigation 1: Multidimensional state anxiety in horse trials.

The studies in this investigation analysed horse trials riders experience of multidimensional competitive state anxiety and its effect on performance. Initially, the interaction between the rider and horse was examined to attempt to provide support for the literature advocating the interaction (Lockhart, 1990). The evaluation of anxiety within horse trials must also take into account this interaction. Studies 5.3 to 5.6 refer to the analysis of the development of multidimensional anxiety theory and attempted to see if findings in other sports were replicated within the context of horse trials.

### 5.1 Rider's Perceptions Questionnaire (RPQ) - An investigation into the horse and rider interaction - myth or reality ?

#### *5.1.1 Introduction*

In equestrian sports, the rider and horse compete together. The performance of both the rider and the horse contribute to the final performance (Coles, 1987). The rider produces movement from the horse through the application of 'aids'. These aids include; vocal communication and body position encompassing leg, seat and hand aids. When the rider experiences state anxiety, his/her body position is altered as a result of the psychological, physiological and behavioural components of state anxiety (Liebert & Morris, 1967; Davidson & Schwartz, 1976; Borkovec, 1976) hence affecting the performance of the horse.

The changes in psychological, physiological and behavioural components of anxiety experienced by the rider during an anxiety-provoking situation affect his/her body position and the application of the aids. The rider may doubt his/her ability and lack self-confidence. Consequently, he/she may approach a fence on the cross-country less strongly resulting in the horse lacking the necessary speed and impulsion to successfully jump the fence. The rider may also, due to increased muscle tension, sit heavily in the saddle and become tense in his/her lower leg. This would cause a change in the aids the horse receives, producing a different movement to that required by the rider.

It is known that the horse is sensitive to changes in the rider's body position (Henriques, 1987; Knox, 1989). It has also been suggested that the horse is sensitive to physiological changes occurring in the rider. Tension and nervousness in the rider produces changes in his/her sweat, breathing and muscle tension. These changes provide enough stimulus to elicit fear, excitement or tension in the horse (Lockhart, 1990).

Therefore, an increase in nervousness of the rider can potentially cause performance of the rider to deteriorate and thus, the performance of the rider and horse system also deteriorates (see Section 3.3.2). It is also been suggested that an increase in the nervousness of the rider can also result in a transfer of tension from the rider to the horse, again potentially affecting the performance of both horse and rider in a negative way. Anecdotal evidence supports this theory as this quote from an Advanced event rider illustrates;

“The horse knows...it(*the horse*) realises that I'm tense...and then it (*the horse*) gets tense and then it's a disaster”

Advanced horse trials rider (1994)

The changes in the behaviour of the horse (Perreault, 1991; Fraser, 1992, Kiley-Worthington, 1987) may result in the horse performing incorrectly. This may cause the rider to worry about the performance outcome, thus increasing his/her cognitive anxiety levels. However, very little empirical evidence of the rider and horse interaction exists. To improve the performance of the rider and horse it is necessary to examine and provide empirical support for the existence of this interaction. The aim of the present study was to examine the interaction between the rider and horse through the rider's perceptions and substantiate the existence of the rider and horse interaction. It was anticipated that the study would provide behavioural indicators which could predict increased tension and nervousness in the horse. The data collection for this study was undertaken later than the data collection for other studies in this thesis. It is, however, presented here to provide a coherent progression through the academic theory underlying the study of anxiety within equestrian sports.

### 5.1.2 Method

#### *Subjects*

The sample (n=105) comprised of 15 male and 90 female subjects. Male subjects' ages ranged from 17 - 38 years ( $\bar{x} = 28.53 \pm 7.30$ ) and female subjects' ages ranged from 16 - 50 ( $\bar{x} = 27.17 \pm 8.96$ ). Subjects were all affiliated to the BHS and competed in horse trials (n= 78), show-jumping ( n= 13) or dressage competitions (n= 14). Hence, all competitors competed to the rules and regulations of the BHS. Subjects of differing skill levels, Novice to Advanced, completed the questionnaire.

#### *Measures*

To measure and obtain empirical evidence of the occurrence of an interaction between horse and rider, the researcher developed a questionnaire; Rider's Perceptions Questionnaire (RPQ). Initially, the researcher developed the conceptual framework (Figure 3.3.1, p. 56) to illustrate the interaction between horse and rider. This was based on her own experience and knowledge in equestrian sports and anecdotal evidence frequently reported to the researcher during the data collection of other studies in this thesis. A copy of the RPQ can be seen in Appendix I. Demographic and personal information was obtained from the respondents prior to their response on the RPQ. This information included the subjects' main sport, age, experience, highest level of competition and how often they compete in their main sport.

Statements were formulated in twelve categories that addressed different aspects of the horse and rider interaction (Figure 3.3.1, p. 56). The categories included five which addressed aspects of the rider; *rider's expectations* (3 statements), *rider's thoughts* (4), *rider's mood/feelings* (4), *rider's ability* (3) and *the occurrence of physiological changes in the rider* (1). Five categories addressed rider's perceptions of aspects of the horse; *horse's temperament* (3), *horse's ability* (3), *horse's fitness level* (3), *horse's behaviour* (3) and *horse's experience* (3). Two further categories were included. First, the *contribution of horse and rider to overall performance* (3) and second, *rider's perception of an interaction between horse and rider* (3).

The statements from each category were then randomly listed to form the 36 statement measure. The first 21 statements incorporated a four-point Likert response scale:- 1 (*never*), 2 (*sometimes*), 3 (*most of the time*) and 4 (*always*). The remainder of the statements incorporated a four-point Likert response scale with categories 1 (*not at all*), 2 (*somewhat*), 3 (*moderately so*) and 4 (*very much so*). The response scale chosen for each statement was based on the appropriateness of the language for that statement. An example of the statements in the RPQ are; *“If my horse is misbehaving whilst I am warming up for a competition, I do not expect to perform well”*, *“If my muscles are tense when I am riding, then I can feel my horse becoming tense as well”* and *“My horse’s behaviour directly affects how I feel”*.

Two questions on the RPQ incorporated open ended responses as well as the Likert response scale. Statement 11 asked respondents to rate on the Likert scale the following; *“When I am riding I can feel if my horse is tense”*. The respondent was then asked to provide further open ended information regarding this statement. Specifically, respondents were asked *“If you have chosen 2, 3 or 4, please can you explain how you can tell that your horse is tense when you are riding”*. Statement 20 (*“My horse can sense if I am nervous”*) also incorporated an open ended section. Respondents were asked *“If you have chosen 2, 3 or 4, please explain how you know that your horse can sense if you are nervous”*. These open ended questions were included to obtain more rich and detailed information regarding the rider’s perceptions of the horse and rider interaction.

### *Procedure*

Questionnaires were administered by two methods. The first method incorporated the administration of questionnaires to a captive audience of subjects. This increased the percentage return of questionnaires. The second method involved the administration of the questionnaire to competitors at competitions. Specifically, when riders collected their numbers and start times at competitions, they were given a copy of the questionnaire, a cover letter from the researcher explaining the research and a FREEPOST envelope with which they could return the questionnaire. The two

methods were used to increase the response rate of the questionnaire and thus the sample size of this investigation.

### *Data Analysis*

The data were factor analysed by means of principal components analysis with varimax rotations. Although the sample size was 105, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was above the required value of 0.5. Bartlett's test of sphericity was significant indicating that the factor model was appropriate (Kinnear & Gray, 1994). Factor analysis was performed to test the construct validity and the associations between items on the questionnaire. Based on the factor analysis, other statistical tests were used to assess for relationships between the factors identified and other variables such as, skill level, age and number of years riding. Parametric tests were used if the Shapiro-Wilks test for normality and the Levene test for variance were upheld. If these tests were not upheld, then non-parametric tests were used.

### *5.1.3 Results*

#### *Factor analysis of the RPQ*

The principal components analysis with varimax rotation identified 12 factors with eigenvalues greater than one. Based on the suggestion that each factor should contain at least three items to be considered as a valid factor (Walsh, 1990), two factors were accepted.

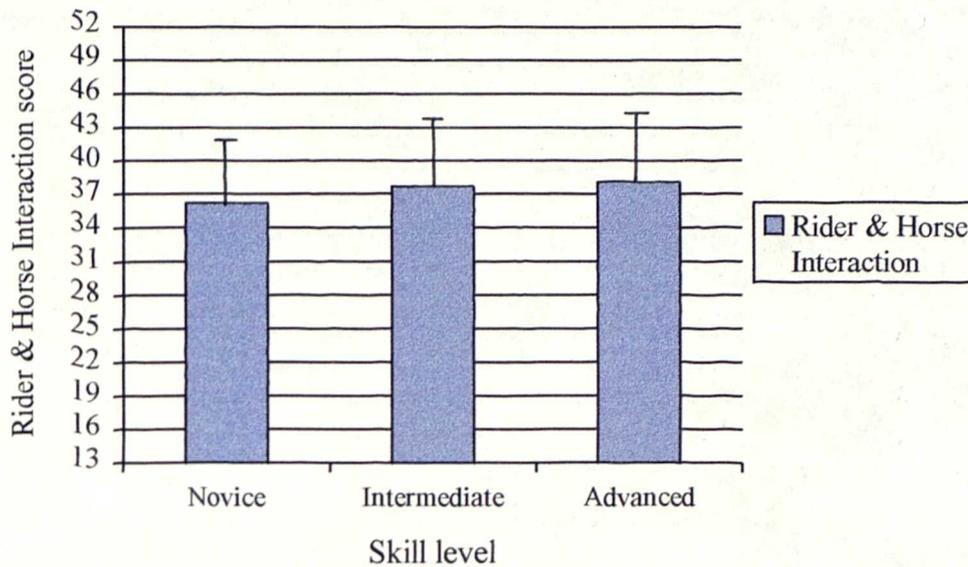
The first factor accounted for 16.5% of the total variance and was named, *rider and horse interaction*. This factor comprised items concerning, the transfer of tension between rider and horse, the effect of the horses behaviour on the rider, and the effect of the rider psychological state on the performance of the horse. The second factor accounted for 8.4% of the total variance and was named, *the rider's influence on the horse*. This factor comprised items concerning, the rider's attitude towards performance and the rider's behaviour and its influence on the performance of the

horse. Factor loadings for the items corresponding to factors are presented in Table 5.1.1.

**Table 5.1.1:** Factors with loadings after principal components analysis with varimax rotation.

Items	Factor 1	Factor 2
<b><i>Rider and horse interaction (Factor 1)</i></b>		
When I am tense I can feel my horse becomes tense (Item 5)	0.59	
Increased self-confidence when perceptions of horses ability are high (7)	0.48	
Horse's behaviour affects how I feel (9)	0.53	
Expectations affect my horse's performance (12)	0.50	
Anger results in my horse misbehaving (14)	0.70	
My thoughts affect my horses performance (19)	0.50	
My horse can sense my nervousness (20)	0.49	
If I'm nervous my horse reacts (22)	0.58	
My mood affects my horse's performance (23)	0.47	
My riding affects my horse's behaviour (24)		
If my horse misbehaves, my performance expectations decrease (28)	0.52	
A fit horse raises my performance expectations (33)	0.57	
Horse & rider can influence each others behaviour (35)	0.52	
<b><i>Rider's influence on horse (Factor 2)</i></b>		
If I worry about a fence, the horse has problems at it (2)		0.46
My positive thinking results in my horse performing well (13)		-0.54
If I ride well, my horse performs well (15)		-0.47
As my horse's experience increases, my expectations for success increase (34)		-0.51

Separate one-way Kruskal-Wallis analysis of variances were undertaken between each factor generated from the factor analysis and skill level. No significant differences were found between skill level and the rider and horse interaction (*Factor 1*) and rider's influence on the horse (*Factor 2*). However, there was a trend for increased perception of an interaction as skill level increased (Figure 5.1.1).

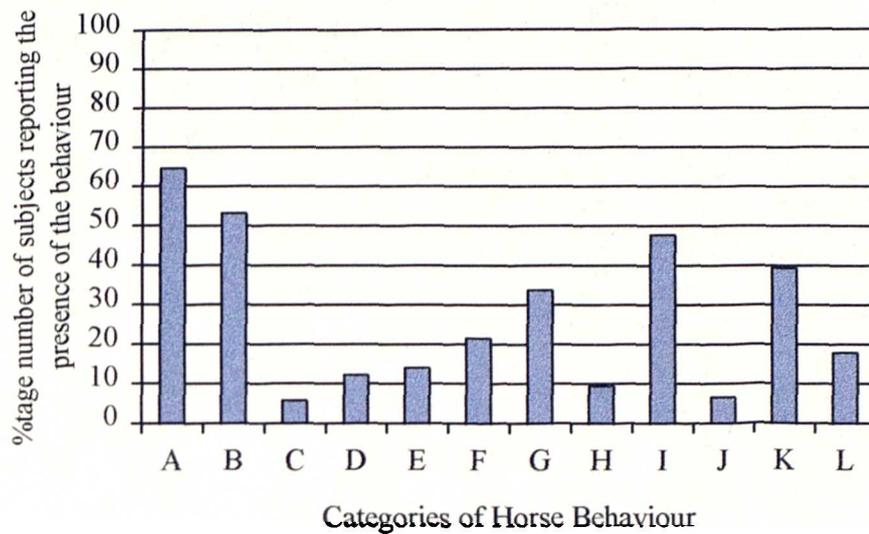


**Figure 5.1.1:** The mean score for rider and horse interaction (Factor 1) with standard deviation bars for the Novice, Intermediate and Advanced riders.

#### *Analysis of open-ended questions*

The RPQ allowed subjects to more detailed responses to two questions. Firstly, question 11, required subjects to provide information explaining the ways in which they could identify if their horse was tense whilst they were riding. The responses were coded by the researcher. Twelve categories of horse behaviour and physiological changes were identified from the analysis of the subjects responses. The categories were; *tension, hollow back, tail swishing, grinding of teeth, anticipating movements, horse is excited, ignores aids, jogging, shortened stride, shying, head above the bit, horse's mouth is set against rider's hand*. The categories of *tension, hollow back, shortened stride* and *head above the bit* were most frequently reported by riders as occurring when the horse became tense (Figure 5.1.2).

For question 20, riders were required to explain the ways in which they perceived the tension to be transferred to the horse. The responses were categorised by the researcher. 21% of riders perceived the *tension through the reins* to cause the horses tension, 20% reported the *tension in rider's legs* caused the tension in the horse and 28% of riders reported the *tension in the rider's body* caused the tension in the horse.



**KEY:-** A- tension, B- hollow back, C- tail swishing, D- grinding of teeth, E- anticipates movements, F- horse is excited, G- ignores aids, H- jogging, I- shortened stride, J- shying, K- head above bit, L- horse's mouth set against riders hand.

**Figure 5.1.2:** The percentage number of riders reporting the presence of the horse behaviour when the horse was tense.

#### 5.1.4 Discussion

##### *Factor analysis of RPQ*

The purpose of the study was to investigate the riders' perceptions of an interaction between the rider and the horse. The RPQ was designed to obtain information regarding these perceptions. The interpretation of the statistical results from a factor analysis test required the researcher to formulate labels for latent variables which are applicable and valid to the theoretical area of study. The factor analysis of the RPQ revealed two factors; *rider and horse interaction* and *rider's influence on the horse*. Factors comprised of 15 and 4 items respectively. Both factors indicated that there was an interaction between the rider and the horse which contributed to the performance of the 'system', that is the total performance of both the rider and the horse.

The factor loadings ranged from between 0.46 to 0.70. Future development of the RPQ would require the re-assessment of the items in each factor, particularly factor 2 where two of the items had low factor loadings. It is envisaged that through

development and further statistical testing of the RPQ to assess its reliability and validity, it would be possible to develop a psychometric measure which may be used to predict performance of riders. A low perception of rider and horse interaction and a low perception of the rider's influence on the horse may predict a lower level of performance than a high perception on these two factors. Future investigation of the relationships between the RPQ and competitive state anxiety and self-confidence levels is required in equestrian sports. Analysis of the sex differences in relation to the RPQ may also indicate different perceptions of the rider and horse interaction between males and females. The sample did not comprise a sufficient proportion of male riders to undertake this analysis in this study.

There was a trend of increasing perception of a rider and horse interaction with increasing skill level was observed in the data. Development of a more sensitive measure of the rider and horse interaction (RPQ) may reveal skill level differences in future analysis. Further research could incorporate video analysis of the behavioural indicators of tension, biomechanical analysis of forces exerted by the rider and physiological analysis of heart rates.

#### *Analysis of open-ended questions*

The analysis of open-ended questions revealed several categories of horse behaviour which rider's reported could identify when their horse was tense. A large percentage of riders reported general increased tension in the horse, the hollowing of the back, shortened stride and the horses head above the bit as indicators of a tense horse. The categories identified correspond to the behavioural indicators of tension and nervousness identified in the horse in Section 3.3.2 (Perreault, 1991; Fraser, 1992).

The analysis of rider's perceptions of the ways in which tension was transferred from themselves to the horse revealed three main categories; *tension through the reins*, *tension in the rider's legs* and *tension in the rider's body*. These reactions in the rider were a result of the increased arousal or somatic anxiety associated with the state anxiety reaction (Morris et al., 1981; Martens et al., 1990). The rider's perceptions

supported the suggestion of an interaction between rider and horse during situations perceived as threatening (Lockhart, 1990). Future research into the exploration of the interaction between the rider and horse is suggested with the use of in-depth interviews and perhaps physiological indicators of arousal.

#### *5.1.5 Conclusion*

The results provided initial empirical evidence of an interaction between the rider and horse. The analysis of the RPQ identified two factors; *rider and horse interaction* and *rider's influence on the horse*. Future research needs to develop the reliability and validity of the RPQ. The results also identified several behavioural and observable physiological indicators of tension in the horse. It also provided suggestions as to the ways in which the tension in the rider is transferred to the horse and hence supported the literature (Section 3.3). Further analysis of the rider and horse interaction could encompass in-depth qualitative analysis and the assessment of physiological indicators of tension, for example, tension on the horse's mouth via the reins, heart rate analysis, and forces exerted by the rider through the leg aids.

## 5.2 Construction and administration of anxiety database questionnaire.

### *5.2.1 Introduction*

Competition preparation encompasses many different psychological factors that affect athletes with varying intensities and subsequently affect performance. Examples of such variables include, motivation, self-confidence, anxiety, aggression and concentration. Each variable has considerable importance when considered on its own, yet of greater consequence is the interaction of all these variables on the performance of the athlete (Martens et al., 1990; Jones, 1991b).

Anxiety is a major psychological variable affecting nearly every athlete at some stage in her/his sporting career, whether it is at a school level or an international level. Much research has been undertaken to investigate the effect of anxiety on sports performance (Gould et al., 1984; McAuley, 1985; Martens et al., 1990). Coaches and athletes have become more aware of the importance of psychological variables on performance (Sanderson, 1989). Anxiety also appears to be the psychological variable that causes significant effects on performance by interacting with most of the other psychological variables mentioned (Jones, 1991b). Effects of anxiety include; reduced or increased motivation, decrease in self-confidence, lack of concentration, decreased information processing space, poor judgement and altered co-ordination (Morris et al., 1981, Carver & Scheier, 1988). Jones (1991b) suggested that anxiety appears to be the key concept affecting all other variables. Hence, by studying and controlling anxiety there is the possibility of reducing the effects on other psychological variables and thus improving riders' performance.

The effect of these psychological variables on performance has been studied in other sports including; basketball (Sonstroem & Bernardo, 1982), volleyball (Gould et al., 1984), collegiate golfers (McAuley, 1985), track and field (Swain & Jones, 1992), gymnastics (Jones et al., 1993) and swimming (Jones et al., 1994). To gain a clearer understanding of the effect on performance of horse trials rider it was necessary to evaluate such psychological variables. The aim of this study was to evaluate the

prevalence of various psychological variables within the sport of horse trials. Additionally, it was hoped to summarise the practical aspects associated with horse trials including; financial and occupational factors, so as to provide information about the sport in its entirety. It was envisaged that this study would provide information regarding anxiety in horse trials and hence form a starting point from which to analyse anxiety in horse trials in more depth.

### *5.2.2 Method*

#### *Subjects*

An opportunity sample of thirty-one subjects, both male (6) and female (25), completed the questionnaire in this study. Competitors who were willing and volunteered to participate in the study were then contacted to arrange a date and time to administer the questionnaire. All subjects were affiliated to the British Horse Society (BHS) Horse Trials Group and were situated throughout Great Britain. The subjects were classified into Novice (n=10), Intermediate (n=11) and Advanced (n=10) groups based on the BHS classification scheme and the current, highest level in which the riders compete. The average age of the subjects was 25.4 years (sd =  $\pm 7.7$ ).

It was acknowledged that biases in the sample may exist. Competitors who volunteered may possibly exhibit lower anxiety scores and may not feel “worried” or “affected” by sharing their feelings with the researcher. Whilst obtaining subjects, the researcher did not observe any bias within the sample obtained. Subjects who classed themselves as a “worrier” were also quite willing to provide information regarding their feelings prior to horse trials.

#### *Measurement*

A review of literature revealed psychological factors identified as affecting the athletes' sports performance (Harris & Harris, 1984; Martens et al., 1990; Bull, 1991b). This information, together with the researcher's experiences within the sport

and anecdotal evidence provided by riders, enabled identification of various factors that were deemed important to a rider competing in BHS One Day horse trials.

A questionnaire was designed by the researcher to incorporate questions regarding the psychological variables: anxiety, self-confidence, motivation, concentration, attention, antecedents of anxiety, goal setting and mental rehearsal. Questions regarding finance and occupation, level of experience and sports participation were also included. A copy of the questionnaire is in Appendix II.

The questionnaire comprised thirty-one questions in a structured format. It incorporated open-ended and “*yes or no or sometimes*” response questions and Likert scale response questions. The Likert scale required subjects to choose a response from the categories 1, “*never*” 2, “*sometimes*” 3, “*often*”; 4, “*always*”. Certain questions (question 26 and 28) asked whether subjects understood the meaning of a certain term and the response was either “*yes*” or “*no*”. For example, ‘*Do you understand the meaning of the term goal-setting?*’. Subjects who responded with “*no*” were then read a set definition formulated by the researcher before continuing with the questionnaire. In the above example, the set definition used was “*a method by which your aims and objectives for a certain period of time are clearly set out*”. This was to ensure all subjects fully understood terms prior to answering questions.

### *Procedure*

A pilot study of the questionnaire was undertaken. The questionnaire was administered to event riders known to the researcher who assessed it for ease of understanding, clarity and relevance and face validity with regard to aspects of horse trials. The questionnaire was administered over the telephone and a pilot study was also undertaken for this aspect of the procedure. Questions were asked by the researcher, response categories explained and answers were recorded on the question sheet. Again, the riders assessed the questionnaire for clarity of language used, ease of understanding questions and relevance to the sport of horse trials. As a result of this pilot work, the questionnaire was changed in only one aspect. The Likert scale point 3

“often” was changed to “most of the time”. It was felt by the riders that this term more easily related to the questions yet did not alter the response categories of the Likert scale. The researcher was satisfied with the administration of the questionnaire over the telephone. All details were easily recorded and no ambiguity in questions was identified by the pilot study.

The questionnaire was then conducted as a telephone interview which were previously arranged with subjects. This was necessary due to time and financial constraints. Subjects were situated throughout Great Britain and it would have been impractical to travel and visit each subject to administer the questionnaire. Telephone calls took an average of fifteen minutes to complete. When the questionnaire was administered, all questions were asked in the same manner and order. Despite this however, some interviewer bias may have occurred due to the nature of the data collection. Interpretation of results and conclusions drawn took this possibility into consideration.

### *Data Analysis*

Descriptive statistics involving percentage values were obtained for the data. Trends were then extracted and explanations for these results were identified. Following visual inspection of the data, chi-square analysis was used to assess any observed associations between variables.

### *5.2.3 Results*

The results obtained from the questionnaire were grouped into five subject areas to aid understanding. The subject areas were; general information, competitiveness, anxiety, confidence, and stress management techniques.

### *General Information*

The results showed that 90% of horse trials riders competed in other Equestrian sports. With regard to level of experience, similar percentages of Novice (100%), Intermediate (82%) and Advanced (90%) rider subjects interviewed competed in

other Equestrian sports such as Dressage, Show-jumping, Team-chasing, Combined training and Driving.

Altogether, 65% of riders competed in pure Dressage competitions and 42% of these riders competed at an affiliated level. That is, they were registered to the BHS and competed to the rules and regulations for that level of competition. Show-jumping competitions were participated in by 77% of subjects. Of these subjects 55% competed in affiliated competitions. A larger percentage of Advanced riders (90%) competed at this level compared to Intermediate (46%) and Novice riders (30%). The cross-country sphere produced opposite results. 94% of all subjects reported they did not compete in cross-country competitions.

With regard to subjects' occupation, there was a significant Chi-square distribution ( $P < 0.05$ ) between Novice, Intermediate and Advanced riders. Seventy per cent of Advanced riders work with horses full-time, compared to 10% of Novice riders. The Intermediate riders were split equally, with 50% working with horses full-time and 50% employed full-time in jobs unrelated to any Equestrian sphere. Thirty per cent of the sample reported having sponsorship to compete in horse trials, specifically no Novice riders were sponsored compared to 46% of Intermediate riders and 30% of Advanced riders.

### *Competitiveness*

A significant proportion of the sample ( $P < 0.01$ ; 74%) reported a high level of competitiveness when competing in equestrian sports. There was an increase in competitiveness with increasing experience level of riders. Specifically, only four Novice riders considered themselves as very competitive compared to nine Intermediate riders and ten Advanced riders. Supporting this finding, 23% of subjects reported always setting out to win when they competed in horse trials. This value consisted of Intermediate and Advanced rider subjects only. In the sample, 74% of subjects reported they always competed for fun and enjoyment. Ninety per cent of Novice rider subjects always competed for the fun and enjoyment aspect, compared

to 72% of the Intermediate rider subjects and 60% of the Advanced rider subjects. This finding was the reverse of the previous result where subjects reported the extent to which they set out to win.

Fifty-two per cent of all subjects reported always having sufficient motivation to succeed when they competed. This was in terms of the motivation to succeed in the goal they had set for the competition which, in not all cases, was to win. When considering the extrinsic motivation in horse trials, 100% of subjects reported that the prize money was not the only incentive for them to compete.

### *Anxiety*

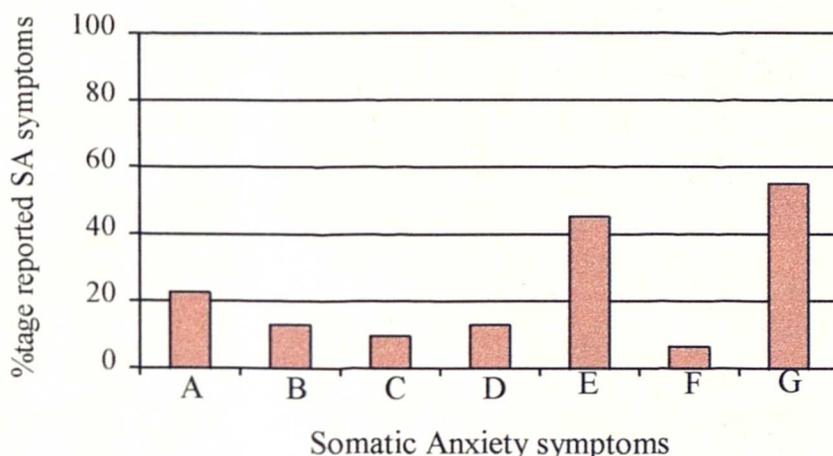
Eighty-seven per cent of all subjects reported feeling anxious prior to a horse trial. In the sample, 71% of subjects stated that this level of anxiety experienced was greater than the anxiety they experienced prior to other sports competitions. There was a difference found in the reasons for this anxiety. Where 30% of subjects consider horse trials to be more important; specifically, Intermediate, (55%) and Advanced (20%), no Novice riders, stated that the horse trials were more important. In contrast, 50% of Novice, no Intermediate and 20% Advanced riders regarded the increase in anxiety prior to a horse trial to be due to embarrassment and a fear of letting down significant others, such as parents, trainers, friends and family. Altogether, 55% of subjects stated they felt increased pressure and worry from external sources such as sponsors, parents and trainers. However, none of these specific categories was found to be significant at the 5% confidence level.

When considering the riders' emotions prior to each phase of the horse trial, no trends were found in responses for the Dressage or the Cross-country phases. Responses were varied for these phases. For the show-jumping phase, however, 20 (68%) subjects reported feeling nervous prior to this phase. Specifically, 8 Novice riders, 8 Intermediate riders and 4 Advanced riders. With regard to multidimensional anxiety 94% of subjects reported experiencing physiological bodily sensations when competing in horse trials. The symptoms of somatic anxiety experienced were varied

however, 55% of subjects reported experiencing butterflies prior to horse trials (Figure 5.2.1).

*Confidence*

Fifty-two per cent of subjects reported feeling confident prior to most horse trials whereas 23% reported feeling confident prior to every horse trial they competed in. Of this 23%, no Novice rider subjects, 37% of the Intermediate rider subjects and 30% of the Advanced rider subjects felt confident prior to every horse trial.



**KEY:-** A - Increased heart rate, B - Frequent visits to the toilet, C - Yawning, D - Tiredness, E - Increased muscle tension, F - Increased perspiration, G - Butterflies.

**Figure 5.2.1:** The percentage of riders experiencing somatic anxiety symptoms.

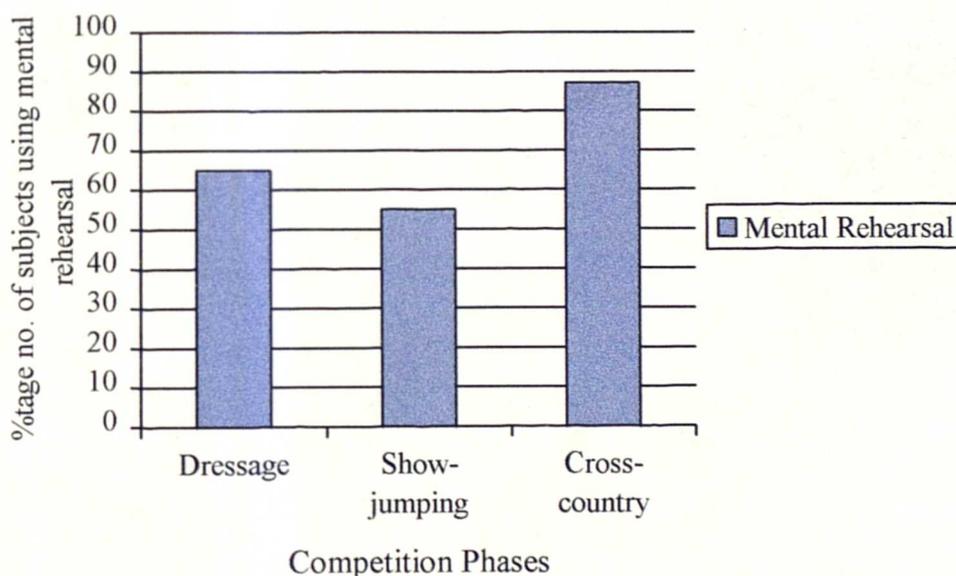
Subjects were asked how they perceived their self-confidence was affected for the rest of the horse trial as a result of feedback about their dressage performance. If a below par Dressage result was obtained, 71% of subjects (Novice, 70%; Intermediate, 55%; Advanced, 90%) reported their self-confidence would remain the same. Varied results were found if a good dressage performance was achieved. Altogether, 50% of Novice, 27% of Intermediate and 60% of Advanced riders reported that their self-confidence level would remain the same for the next show-jumping phase. Also, 50% of Novice, 63% of Intermediate and 20% of Advanced

riders reported their self-confidence level would increase. A small percentage 10% of all riders reported a decrease in self-confidence upon receiving a good dressage mark (no Novice, 10% Intermediate and 20% Advanced).

### *Stress Management Techniques*

The Stress Management Techniques (SMT) studied were goal setting and mental rehearsal. Seventy-one per cent of all subjects (60% Novice, 64% Intermediate and 90% Advanced) reported using goal setting within the sport of horse trials. Riders were significantly ( $P < 0.01$ ) more likely to use long term goals rather than short term goals in this sample.

Initially, 45% of subjects did not understand the meaning of the term “mental rehearsal”. However, once explained to them, 77% of all subjects stated they did use mental rehearsal prior to horse trials. When considering each phase of the horse trial, differences occurred in the percentage of subjects utilising this technique prior to the phase. The highest percentage was recorded for the cross-country phase (Figure 5.2.2).



**Figure 5.2.2:** The percentage number of riders who used mental rehearsal prior to the dressage, show-jumping and cross-country phases.

Analysis of the superstitious behaviour exhibited by riders revealed that 60% of Novice subjects, 73% of Intermediate subjects and 80% of Advanced subjects were superstitious about horse trials. Thus, the results showed an increase in superstitious behaviour with increasing level of experience.

#### *5.2.4 Discussion*

##### *General Information*

The results showed that almost all riders in the study competed in other Equestrian spheres, such as dressage and show jumping competitions. These are regarded as an important part of an event rider's preparation for horse trials. Riders compete on their horses throughout the Winter season when no horse trials take place (the horse trials season runs from March to early October) and is seen as an important training process. Riders compete in the dressage and show-jumping competitions to simulate the dressage and show-jumping phases of the horse trial, and thus improve their technique and accuracy in these phases. Simulation of the cross-country phase is rarely undertaken and this was supported by the results that showed that 94% of riders did not partake in cross-country competitions. The physical demands of the cross-country course are large in terms of high impact forces on the horses. Possible leg injuries related to concussion deter riders from practising this phase to the same extent as the dressage and show-jumping. The riders will, however, ensure the horse achieves the correct level of fitness required for the horse trial. Experience for the cross-country phase is built up gradually through horse trial competitions.

The percentage of Advanced riders working full-time with horses is much greater than the percentage of Novice riders. At the top level of the sport the standard of competition, quality of preparation and training of riders and horses requires more time than at the Novice level. More Advanced riders were sponsored to supplement their full time jobs working with the horses. Intermediate and Advanced riders, in this sample, were sponsored to compete in horse trials whereas no Novice subjects are. This is perhaps due to the requirements of a sponsor who would require their

companies name to be in the “public eye”. At the higher level in the sport this is more likely due to greater media coverage of the sports top level.

### *Competitiveness*

A larger percentage of Advanced riders considered themselves very competitive in comparison to Intermediate and Novice rider subjects. Supporting this finding that the more experienced subjects are more competitive, only Intermediate and Advanced rider subjects reported always setting out to win. The Novice riders, on the other hand, always reported competing for the fun and enjoyment aspect of the horse trial. The Intermediate and Advanced riders also placed emphasis on the fun and enjoyment aspect but regarded the competitive element as important. This suggests that Intermediate and Advanced riders possess the necessary qualities to progress to the top level in horse trials. Further research analysing this area in more depth would provide more evidence regarding the qualities needed for elite horse trials performance.

Approximately half of the respondents reported always having sufficient motivation to succeed in the goal that they had set for the horse trial. Motivation is an important factor contributing to athletic performance (Gould, 1993). Hence, this is an unexpected finding with only half the subjects perceiving themselves as sufficiently motivated and it highlights a potential impairment to successful performance. This result may be due to the fact that a small sample size has been used and only tentative conclusions can be drawn. Other variables may also be involved which effect the motivation of the rider on the day of the horse trial such as anxiety, daily hassles and external pressures.

With regard to extrinsic and intrinsic motivators, all the respondents reported that the prize money was not the only incentive for them to compete. The riders identified intrinsic motivators to provide incentive for competing in horse trials. Such incentives were; improvement in their riding ability and in the horses' scope and ability, enjoyment of competing, exhilaration of the cross-

country, sense of achievement and the formation of a partnership based on trust and confidence with the horse.

### *Anxiety*

A large percentage of all subjects reported feeling anxious prior to competing in a horse trial. This nervousness was reported to be greater than that experienced prior to other equestrian sports or sporting competitions. Differences were found between Novice and Advanced riders as to the reason for this anxiety. Advanced riders reported the reason for this anxiety was because they regarded the horse trial as more important to them compared to other sporting competitions. The Novice riders, however, stated that the reason for this increased nervousness was a fear of embarrassment upon failure of mistakes and also a fear of letting down significant others such as parents, trainers, family and friends. This finding suggested that the Novice riders were more concerned with social recognition of performance and living up to the expectations of others. The Advanced riders were concerned, but only in terms of their performance and how they, and the horse, had improved.

The Intermediate riders were evenly divided; 50% of the respondents reported the reasons for the increased anxiety was due to the event being more important and 50% regarded the fear of embarrassment and the fear of letting down significant others as the cause for the anxiety. An explanation for this result may be the causes of anxiety which can differ depending on the individuals' level of experience. As the competitors become more experienced, they may become less concerned with the consequences of making mistakes or the associated embarrassment. They become more focused on the actual quality of performance and whether they and the horse are improving. This has implications for stress management intervention for the less experienced riders. They may be taught to focus more on the performance and analyse it for areas of improvement, thus becoming more performance-orientated rather than outcome-orientated (Gould,

1993). Hence they may be able to control the amount of worrying associated with mistakes, and potentially improve performance.

The riders feelings prior to the dressage and cross-country phases were very varied with no obvious trends with level of experience. However, prior to the show-jumping phase, a large percentage of all subjects reported feeling nervous. More research is needed to ascertain the causes of this nervousness. Possible reasons may be that event riders are more concerned about this phase due to the accuracy needed and the fact that the show-jumping fences can be knocked down, thus incurring penalties.

It was necessary to analyse the multidimensional components of anxiety with regard to horse trials. Almost all subjects reported experiencing somatic anxiety symptoms when competing in horse trials. There was a wide range of symptoms experienced including; increased heart rate, sweating and muscle tension, frequent visits to the toilet, yawning and butterflies. The variation in reported somatic anxiety supports the suggestion that individual differences occur in the physiological responses to anxiety. Borkovec (1976) emphasised that individuals respond to a stressor in physiologically different ways. This has important implications for the implementation of stress management for riders. The identification of possible stress management techniques for riders must take into consideration the individual experiences of somatic anxiety as well as cognitive anxiety.

Half the riders in the sample reported experiencing 'butterflies' prior to the horse trial. A possible explanation for this percentage compared to the small percentages for other symptoms, is that 'butterflies in the stomach' is a widely recognised symptom of anxiety and thus more frequently recognised and reported by subjects. Other symptoms such as increases in sweating, and increases in yawning may not be as widely recognised as symptoms of anxiety and therefore omitted by subjects.

### *Confidence*

Seventy-five per cent of subjects reported feeling confident prior to most or all of the horse trials in which they competed. This may be due to their preparation prior to the competition in terms of training, technique and skill and fitness levels of themselves and the horses which results in an increased level of perceived readiness. Riders' perceived ability may consequently match the standard of the event they are to compete in (Csikszentmihalyi, 1975).

Throughout the horse trial the rider is able obtain feedback, both intrinsic and extrinsic, about their performance. This will directly effect their self-confidence levels and perceived readiness and ability for the next phase. If the riders obtained a poor dressage score then 71% of subjects reported their self-confidence level would remain the same. It was anticipated that self-confidence would decrease as a result of a poor dressage performance. A possible explanation for the finding that self-confidence remained the same is that most riders can regard each phase, as separate. Whilst they acknowledge their performance in previous phases, they are able to detach that performance from the next phases. Future assessment of anxiety must incorporate its relationship to performance between the dressage, show-jumping and cross-country phases.

If a good performance was obtained in the dressage phase, results indicated, 45% of subjects stated that their self-confidence would remain the same. Again, riders' are able to separate each phase in the horse trial. An increase in self-confidence was experienced by riders upon a good performance in the dressage phase. The explanation for this increase in self-confidence may be that a good performance serves to boost the riders' confidence in their ability and hence they were able approach the show-jumping phase with increased self-confidence. Problems occur when the riders become over confident and complacent leading to inattention and the possibility of errors. A small percentage of Intermediate and Advanced subjects reported a decrease in self-confidence after performing well

in the dressage phase. A possible explanation was that the riders' experienced increased pressure to do well.

### *Stress Management Techniques*

The results showed that goal setting and mental rehearsal were techniques already used by riders in the sport of horse trials. Many riders used goal setting techniques for the long term organisation of goals. They do not gain full benefit of the technique because they do not use short and intermediate term goals to aid direction and monitor progress (Locke & Latham, 1985).

With regard to mental rehearsal, 77% of respondents reported using the technique for the three phases. Fewer riders used the technique for the show-jumping phase which may account for the increased nervousness felt by the subjects prior to this phase. Fewer riders mentally rehearsed the show jumping course and perhaps as a result felt less prepared and hence more nervous for this phase. Another technique to gain control over performance took the form of superstitious behaviour. By abiding to superstitions, riders secure a feeling of control over their situation and preparation. This, in turn, reduces the anxiety experienced and potentially leads to an improvement in performance.

### *5.2.5 Conclusion*

The results indicated differences in competitiveness, anxiety, self-confidence and financial and situational circumstances between Novice, Intermediate and Advanced riders. The conclusions drawn from study are tentative and generalisations must be treated with caution due to the small sample size. The study revealed areas that require further research and clarification. Areas highlighted for future research are the antecedents of anxiety and level and type of anxiety occurring in riders of differing experience levels. These areas will be addressed in subsequent studies (Investigation 1 and 2) and taken into consideration for the design and implementation of individualised stress management intervention programmes in Investigation 3.

## 5.3 Temporal patterning of multidimensional competitive state anxiety in horse trials

### *5.3.1 Introduction*

Developmental research into the concept of anxiety has resulted in the current view of a multidimensional construct involving three separate yet interacting components; physiological, cognitive and overt behavioural (Davidson & Schwartz, 1976; Borkovec, 1976). The development of multidimensional competitive state anxiety has brought about the development of sport specific measures of anxiety, for example, the Competitive State Anxiety Inventory - 2 (Martens, Burton, Vealey, Bump & Smith, 1982 cited by Martens et al., 1990). Sport psychology research has examined competitive state anxiety and sport performance in great detail (Karteroliotis & Gill, 1987; Krane & Williams, 1987; Jones et al., 1993). For a detailed discussion of the development of multidimensional competitive state anxiety see Section 2.3.

There is little empirical evidence to identify how riders experience competitive state anxiety in horse trials. Consequently, the level of multidimensional competitive state anxiety and the temporal patterning of the components are important areas of study in the context of British Horse Society (BHS) horse trials. The sport of horse trials provides an ideal opportunity to assess multidimensional competitive state anxiety both prior to the competition, between phases of the competition and after the competition. This will provide an understanding of the interaction between the rider and his/her perception of the situation during competition and the effect of this on state anxiety levels and performance. Valuable information may be obtained regarding the reaction of riders to competition thus highlighting areas for possible stress management intervention. The aim of this study was to examine multidimensional competitive state anxiety within BHS One Day horse trials using the CSAI-2 and to investigate the temporal patterning of the components.

### *5.3.2 Method*

#### *Subjects*

An opportunity sample of four male and 16 female subjects (n=20) were all affiliated to the British Horse Society Horse Trials Group. The average age of the subjects was 26.25 (sd =  $\pm 9.6$ ) years. Subjects were based throughout Great Britain. Standard BHS horse trials dressage tests were set at each horse trial and the dimensions of fences and lengths of show-jumping and cross-country courses were set by the BHS Horse Trials Group. Subjects completed the questionnaires at horse trials and were competing at their highest level of competition when they took part in the study.

#### *Measures*

Competitive state anxiety and self-confidence levels were measured using the Competitive State Anxiety Inventory - 2 (CSAI-2-1 Martens et al., 1982, cited by Martens et al., 1990) (see Appendix III). This questionnaire is a multidimensional, sport specific, state anxiety measure and was developed in response to the need to evaluate the components of multidimensional competitive state anxiety. The scale comprises 27 items with 9 items for each of the three subscales of cognitive anxiety, somatic anxiety and self-confidence. Responses to each item are on a four-point Likert type scale ranging from 1 (*not at all*) to 4 (*very much so*). Hence, the possible range of total scores for each scale is 9 to 36. Examples of cognitive anxiety items include "*I'm concerned about performing poorly*" and "*I am concerned about choking under pressure*", whilst somatic anxiety items include "*I feel nervous*" and "*I feel tense in my stomach*". The self-confidence scale was developed from positively worded items of the cognitive anxiety scale and, upon analysis, was found to be a separate scale. Such items include "*I feel at ease*" and "*I'm confident I can meet the challenge*". The CSAI-2 is a valid and reliable measure of competitive state anxiety (Martens et al., 1990).

#### *Procedure*

After initial contact was made the subjects were advised as to the research protocol and were assured confidentiality of the information. Subjects then completed the

CSAI-2 at various times in the pre-competition period; 14 days, 7 days, 3 days and 1 day before the competition; on the day of the competition approximately half an hour before each phase of the horse trial: dressage, show-jumping and cross-country. Subjects were asked to complete the questionnaires as close to half an hour before each phase as was practicable for them. These times may have varied slightly between subjects due to the differing nature of riders' warm up routines.

Finally, subjects completed the CSAI-2 as close to an hour after the completion of the event yet before the prize giving, again to standardise the times at which the questionnaires were completed. The CSAI-2 was administered in the post competition period to assess the relationships between CSAI-2 components and the riders knowledge of performance and perceived success. Both McAuley (1985) and Karteroliotis and Gill (1985) used the CSAI-2 after the competition and found reductions in anxiety and relationships between post competition anxiety and performance. There was no mention of altering the language of the questions for administration after the competition. The researcher and colleagues assessed the CSAI-2 questions for face validity in the post competition period and concluded that the administration of the questionnaire was valid before the final result of the horse trial was known to subjects. Consequently, the CSAI-2 was administered one hour after the competition but before the final performance results were available.

### *Data Analysis*

Non-parametric Wilcoxon Signed Rank tests were performed on relevant time points based on visual inspection of plotted data. Page's L test was used to examine whether there was an increasing or decreasing trend across the scores at specific time points. Standard errors were calculated and all graphs in this study have standard error bars displayed.

### 5.3.3 Results

#### *Temporal patterning of CSAI-2 components*

The mean and standard deviations for the CSAI-2 components at each time point are presented in Table 5.3.1. The results showed an elevation in cognitive anxiety two weeks prior to the horse trial and then a subsequent gradual increase as the event approached.

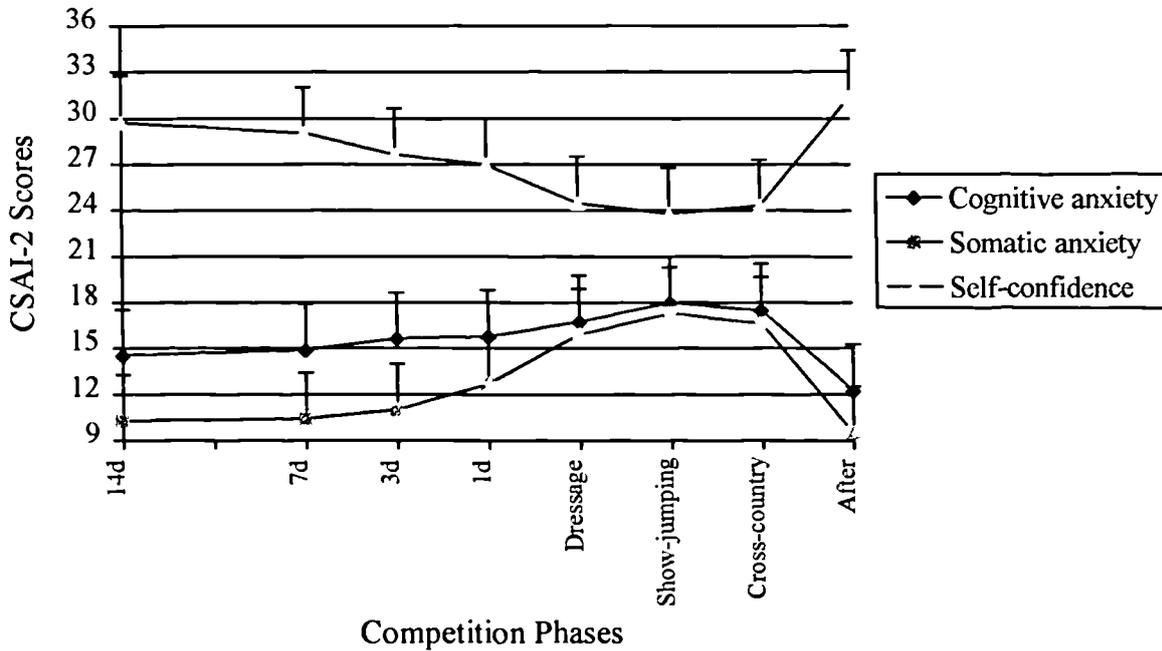
**Table 5.3.1:** The means and standard deviations for the CSAI-2 components prior to, during and after the competition.

Phases of the horse trial	Cognitive anxiety		Somatic anxiety		Self-confidence	
	Mean	± sd	Mean	± sd	Mean	± sd
14 days before	14.55	5.6	10.28	2.65	29.75	4.97
7 days before	14.90	4.54	10.4	2.6	29.05	3.87
3 days before	15.65	5.37	11.00	3.03	27.65	4.30
1 day before	15.8	6.03	12.65	3.99	27.00	4.97
prior to dressage	16.75	5.32	15.90	4.90	24.50	4.98
prior to show-jumping	18.00	6.51	17.30	7.05	23.80	5.31
prior to cross-country	17.50	6.21	16.65	7.10	24.30	5.51
after event	12.25	3.92	9.50	1.02	31.40	4.43

The level of cognitive anxiety increased from  $\bar{x} = 14.55$ , 14 days prior to the event to a maximum value of  $\bar{x} = 18.0$  in the show-jumping phase, although this increase was not significant. A significant difference was found between the cross-country phase and after the event was completed (cognitive anxiety for the cross-country  $\bar{x} = 17.5$ , cognitive anxiety after the event  $\bar{x} = 12.25$ ,  $P < 0.01$ ) (Figure 5.3.1).

The somatic anxiety component was examined using the Page's L test between 14 days before, 7 days before and 3 days before the event and no significant increase was found therefore showing somatic anxiety remained constant. However, Page's L test showed a significant increasing trend 3 days before, 1 day before and on the day of the event before the dressage ( $w = 7.01$ ,  $P < 0.01$ ). A significant increase was found between somatic anxiety 1 day before the event ( $\bar{x} = 12.65$ ) and the somatic anxiety before the dressage phase ( $\bar{x} = 15.9$ ) of the horse trial ( $P < 0.01$ ). The somatic anxiety level remained high throughout the competition with a maximum value of  $\bar{x} = 17.3$  obtained in the show-jumping phase. After the completion of the event,

somatic anxiety was significantly less (somatic anxiety for the cross-country  $\bar{x}=16.65$ , somatic anxiety after the event  $\bar{x}=9.5$ ,  $P<0.01$ ) (Figure 5.3.1).



**Figure 5.3.1:-** The temporal changes in mean CSAI-2 components with standard deviation bars for horse trials riders.

The self-confidence component showed a significant decreasing trend (Figure 5.3.1) between 14 days before, 7 days before, 3 days before and 1 day before the event ( $w=6.84$ ,  $P<0.01$ ). This was supported by a significant difference between the self-confidence 2 weeks before the event ( $\bar{x}=29.75$ ) and before the dressage phase on the day of the event ( $x=24.5$ ,  $P<0.01$ ). The self-confidence remained low throughout the horse trial (min<sup>m</sup> value  $x=23.8$  in the show-jumping phase) and was significantly raised after the completion of the event, to return to baseline levels (self-confidence for the cross-country  $x=24.3$ , self-confidence after the event  $\bar{x}=31.4$ ,  $P<0.01$ ).

#### 5.3.4 Discussion

##### *Temporal Patterning of components*

Gould et al. (1984) and Jones et al. (1988) found an elevation in cognitive anxiety one week prior to the competition. The results in this study showed high levels of cognitive anxiety as early as two weeks prior to the horse trial, suggesting the rider experiences worry and self-doubt at this stage in the pre-competition period. This

increase in cognitive anxiety may be due to the rider obtaining feedback as to the quality of training sessions and how their partnership with the horse is improving. Also, the rider may have doubts as to whether the horse's and his/her own level of fitness is sufficient to complete the competition comfortably without causing undue strain. This is an important factor in the level of anxiety experienced prior to a horse trial, as almost all riders place the safety of the horse as their primary concern.

The maximum cognitive anxiety score was found in the show-jumping phase. Feedback about performance in the dressage phase may account for this increase in cognitive anxiety. It is possible that, as a result of a poor dressage performance, the rider doubts his/her ability. Thus an increase in cognitive anxiety results. The rider may obtain a very good result in the dressage phase, resulting in increased pressure to remain in the top places, hence an increase in cognitive anxiety is again experienced in the show-jumping phase. Another explanation, supported by anecdotal evidence, is simply that the show-jumping phase may be the rider's least preferred phase and this causes an increase in cognitive anxiety. Additionally, the penalties incurred for mistakes in the show-jumping phase could put the horse and rider combination "out of the running" in terms of their final position. Hence, the rider experiences greater pressure to complete this phase without any mistakes and within the time allowed. Arguably then, cognitive anxiety may be predicted to be higher in this phase than the dressage. It is evident that information regarding the antecedents of cognitive anxiety is important to fully understand the riders' reaction to competition anxiety.

The significant decrease in cognitive anxiety after the horse trial was explained by the reduction of self-doubt and relief experienced by the rider upon completion of the event. These results were in agreement with Karteroliotis and Gill (1987) who found that cognitive anxiety decreased in the post competition period. In the 2-week period prior to the event, somatic anxiety remained low and then increased substantially the day before the event and on the day of the event. This was similar to the findings of Jones et al. (1988) and Jones and Cale (1989) where immediate pre-event increases in somatic anxiety were reported. This increase may be due to the

onset of the competition. Competition stressors include; organising the tack and equipment the day before the competition, arriving at the event, collecting competition number, tacking up the horse, and the rider preparing for the competition and are conditioned responses to stimuli (Martens et al., 1990).

The self-confidence component gradually decreased in the 2 weeks prior to the event. Factors that potentially reduced self-confidence in this case were the riders concern about the event, the safety of themselves and the horse and whether they felt sufficiently prepared for the event. A minimum self-confidence value was obtained in the show-jumping. Reasons for this minimum value may include the lack of mental rehearsal undertaken for this phase compared to the dressage and cross-country as suggested in Section 5.2. Also, similar to the reasons suggested in Section 5.2, the horses are trained to be bold and courageous and perhaps are not sufficiently trained for the precision and accuracy required for the show-jumping phase. Again, upon removal of the stressor, self-confidence returned to baseline levels.

#### *5.3.5 Conclusion*

The results support the current view of anxiety as a multidimensional construct comprising of three separate components within the sport of horse trials. The results lend support for the use of the CSAI-2 questionnaire in a wide variety of sport settings. Also, the components showed different changes in temporal patterning prior to, during and after the competition. Therefore, when analysing anxiety within horse trials and evaluating the effect it has on riders' performance, it is important to assess each component. Riders may exhibit differing levels of each component and this must be acknowledged. The lack of differences between the phases may have been the result of the small sample size. It was concluded from this study that the information regarding the intensity of components may be assessed using the CSAI-2 within the context of horse trials. Future research needs to assess whether there are differences in the levels and temporal patterning of CSAI-2 components between riders of different skill levels.

## 5.4 Effects of skill level on multidimensional competitive state anxiety in horse trials.

### 5.4.1 Introduction

The temporal patterning of CSAI-2 components was supported by Section 5.3. It is necessary to consider the possible effect of the riders' skill level on the intensity of anxiety reaction evoked. As athletes become more experienced, they encounter fewer situations which they perceive as threatening. The level of uncertainty about a situation is reduced due to their experience in a wider variety of situations. This may result in a lower level of anxiety experienced by the more highly skilled athletes. It has also been suggested that more highly skilled athletes have better coping skills for dealing with competitive state anxiety (Martens et al., 1990).

Experienced parachutists showed only a mild emotional reaction and lower physiological arousal in comparison to beginner parachutists. It was suggested that the experienced parachutists had become desensitised to the negative effect of anxiety upon completing a large number of jumps (Fenz, 1964; Epstein & Fenz, 1965; Fenz & Epstein, 1967). Fenz (1964) also suggested that the experienced parachutists employed *active emotional control* enabling them to perform the jump successfully. Mahoney and Avener (1977) identified differences in the anxiety patterns and coping skills of successful and superior gymnastic performance. Based on these findings, Martens et al. (1990) examined anxiety using the CSAI-2 between high skilled and low skilled athletes. They hypothesised that high skilled athletes would exhibit less cognitive and somatic anxiety and greater self-confidence than the low skilled athletes. Their findings strongly supported these hypotheses.

The analysis of level of anxiety experienced by riders of different standards is required. As with other sports, horse trial competitions aim to help riders progress, improve and develop their skills to a high standard. Anecdotal evidence suggests that more highly skilled riders experience lower anxiety levels or are able to cope with anxiety during the competition. The aim of this study was to explore the levels of anxiety experienced by Novice, Intermediate and Advanced riders in horse trials.

#### *5.4.2 Method*

##### *Subjects*

Subjects (n=20) were both male (4) and female (16) and were affiliated to BHS horse trials Groups. This enabled the researcher to classify the riders into Novice (n=11), Intermediate (n=5) and Advanced (n=4) groups depending on their highest level of competition. The average age of the subjects was 26.25 (sd = ± 9.6) years. Standard BHS horse trials dressage tests were used at each horse trial. The dimensions of fences and lengths of show-jumping and cross-country courses were set by the BHS horse trials group, hence standards for Novice, Intermediate and Advanced courses were maintained between the horse trials.

##### *Measurement*

The CSAI-2 questionnaire (Martens et al., 1990) (Section 5.3) was used to evaluate multidimensional competitive state anxiety levels between riders of differing skill levels at BHS One Day horse trials.

##### *Procedure*

The procedure for this study was the same used in the Section 5.3. The subjects were divided into groups depending on their skill level. Hence Novice, Intermediate and Advanced riders completed the CSAI-2 prior to Novice, Intermediate and Advanced horse trials respectively

##### *Data Analysis*

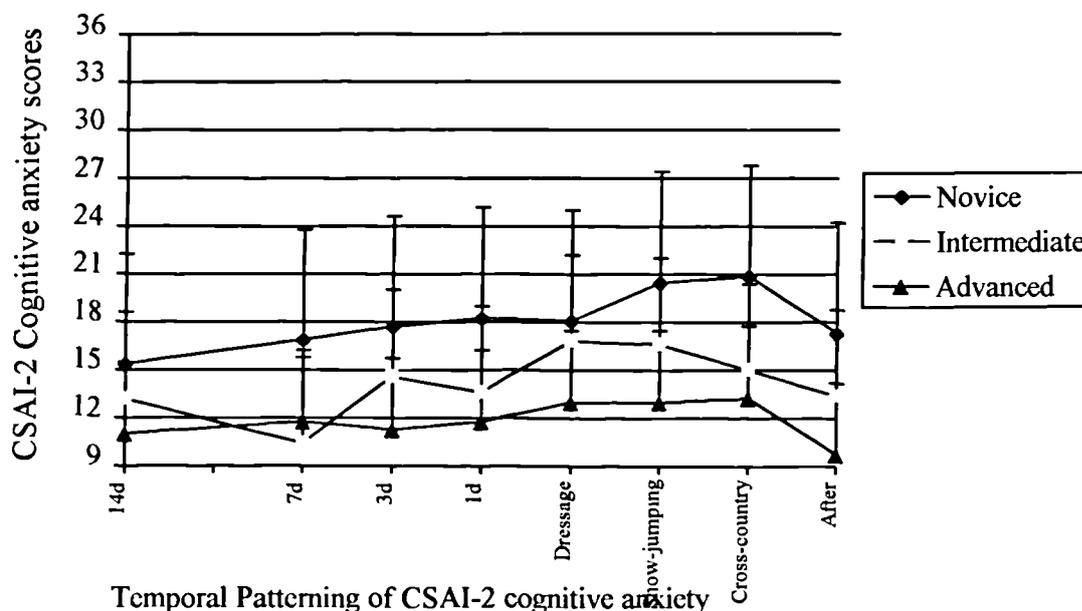
Means, standard deviations and standard errors were calculated for the CSAI-2 components for each skill level group. Non-parametric Mann-Whitney tests were performed on relevant time points based on visual inspection of plotted data.

#### *5.4.3 Results*

##### *CSAI-2 components and skill level*

The Novice riders exhibited the largest cognitive anxiety levels throughout the horse trial. The next highest levels were recorded by the Intermediate riders with the

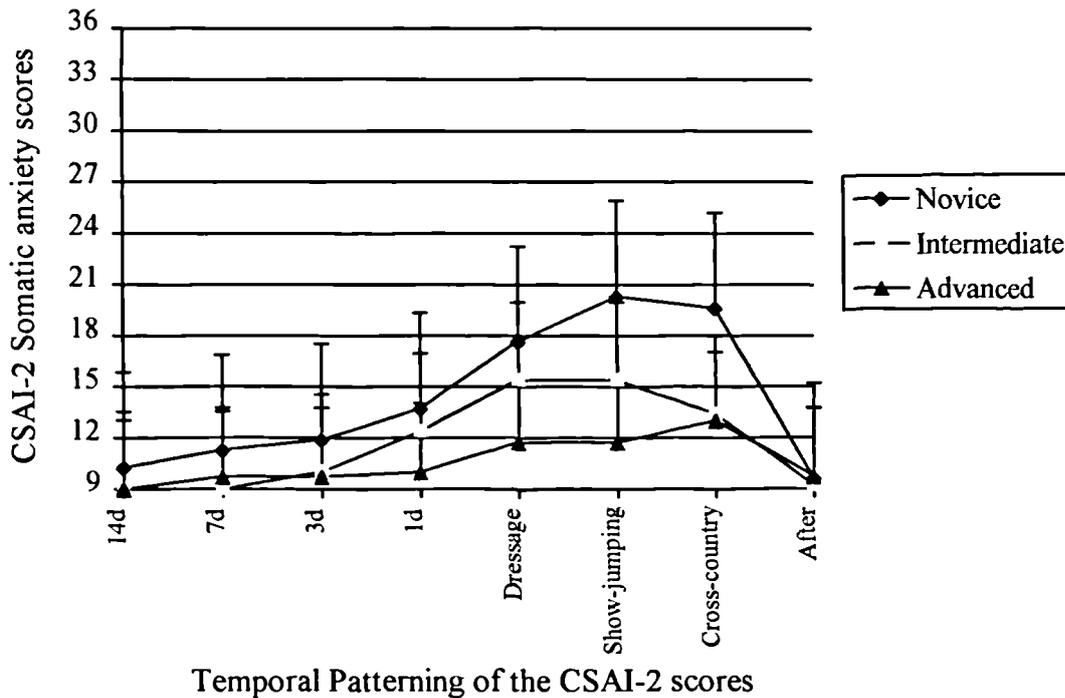
Advanced riders reporting the lowest cognitive anxiety (Figure 5.4.1). Novice riders' cognitive anxiety one week before the event ( $\bar{x}=16.9$ ,  $sd = \pm 4.57$ ) was significantly higher than the cognitive anxiety reported by the Advanced riders one week before the event ( $\bar{x}=11.75$ ,  $sd = \pm 6.25$ ,  $U=3.0$ ,  $P<0.01$ ). Also, between the Novice and Advanced riders 3 days before the event (Novice riders' cognitive anxiety 3 days before  $\bar{x}=17.7$ ,  $sd = \pm 6.03$ ) Advanced riders' cognitive anxiety 3 days before  $\bar{x}=11.25$ ,  $sd = \pm 2.87$ ,  $U=8.0$ ,  $P<0.01$ ). The plotted values for each group; Novice, Intermediate and Advanced, showed temporal changes found previously (Section 5.3). More consistent cognitive anxiety scores were observed for the Advanced group. No significant differences were found between cognitive anxiety for each time point for this group.



**Figure 5.4.1:** The mean CSAI-2 cognitive anxiety scores with standard error bars for the Novice, Intermediate and Advanced riders prior to, during and after the horse trial.

Similar to the cognitive anxiety, the greatest somatic anxiety values were obtained for the Novice group, then the Intermediate group with the Advanced group reporting the lowest values (Figure 5.4.2), This was illustrated by the significant difference between the somatic anxiety recorded by the Novice and Intermediate and Advanced groups, 2 weeks before the event (Novice riders' somatic anxiety two weeks before  $\bar{x}=11.1$ ,  $sd = \pm 4.61$ , Intermediate riders' somatic anxiety two weeks before  $\bar{x}=9.0$ ,  $sd$

= 0, Advanced riders' somatic anxiety two weeks before  $\bar{x} = 9.0$ ,  $sd = 0$ ,  $U = 12$ ,  $U = 8.0$ ,  $P < 0.01$  respectively). Significant differences in somatic anxiety also occurred between the Novice and Advanced groups in the dressage, show-jumping and cross-country phases ( $P < 0.01$ ). As with the cognitive anxiety, more consistent values were observed in somatic anxiety throughout the competition for the Advanced group of riders.



**Figure 5.4.2:** The mean CSAI-2 somatic anxiety scores with standard error bars for the Novice, Intermediate and Advanced riders.

Analysis of the self-confidence component revealed significant differences between the Novice, Intermediate and Advanced groups. Specifically, the Novice riders reported lower self-confidence than the Intermediate riders and the Advanced riders reported the highest self-confidence levels of all the groups (Figure 5.4.3). Self-confidence was significantly less for the Novice riders than the Advanced riders 2 weeks before the event (Novice riders' self-confidence two weeks before  $\bar{x} = 27.45$ ,  $sd = \pm 9.37$ , Advanced riders' self-confidence two weeks before  $\bar{x} = 33.75$ ,  $sd = \pm 1.73$ ,  $U = 3$ ,  $P < 0.01$ ) and again for each phase of the horse trial ( $P < 0.01$ ). No significant differences were found between the Novice and Intermediate groups and the Intermediate and Advanced groups for the self-confidence component. The self-

confidence for the Advanced group remained low after the event ( $\bar{x}=32.25$ ,  $sd=\pm 5.68$ ) and did not return to baseline levels as with the Novice and Intermediate groups.

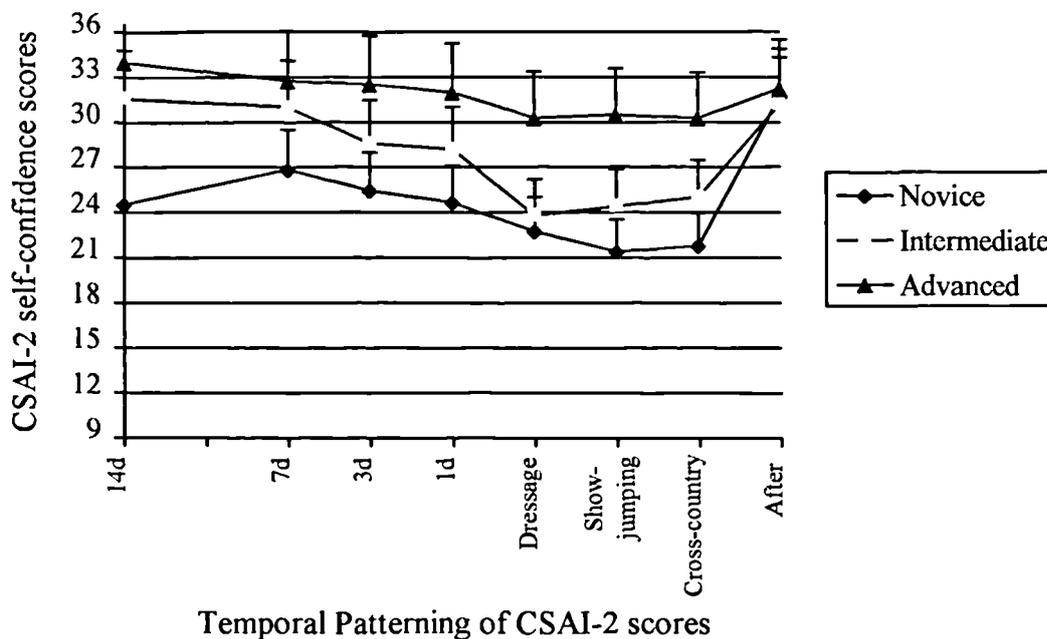


Figure 5.4.3: The mean CSAI-2 self-confidence scores with standard error bars for the Novice, Intermediate and Advanced groups.

#### 5.4.4 Discussion

##### *CSAI-2 components and skill level*

The results suggested that the standard of the rider has an effect on the level of anxiety experienced. Novice riders experienced greater cognitive and somatic anxiety and lower self-confidence than the Intermediate riders, who, in turn, experienced greater cognitive and somatic anxiety and lower self-confidence levels than the Advanced riders. This supports findings by Fenz (1964) with parachutists and Mahoney and Avenir (1977) with gymnasts, who found that the more experienced performers exhibited less anxiety than the inexperienced performers. The cognitive and somatic anxiety and self-confidence showed changes over time that were in accordance with the temporal changes found in the section 5.3. The temporal patterning showed progressive consistency in scores from Novice to Intermediate and finally Advanced riders. This again may have been due to the effect of skill level on the level of anxiety. Two possible explanations for this observation are firstly;

Advanced riders are more experienced and have competed in more horse trials competitions and a greater variety of competitions, suggesting a reduction in the perceived threat of the competition. Hence, a lower intensity anxiety reaction is evoked. This may be true for smaller, less important competitions in which Advanced riders compete. The larger, more important competitions, at which the Advanced riders were tested, would be expected to evoke anxiety reactions of the same relative intensity as for Intermediate and Novice riders competing at their standard of competition. Secondly, Advanced riders, as a result of their experience, have learned coping skills and strategies to enable them to reduce anxiety or utilise it to enhance performance. This may be done at a conscious or unconscious level.

The use of coping skills is similar to the suggestion of Fenz (1964) where that experienced parachutists showed active emotional control and were able to perform better by controlling the emotional reactions to the stressor. Here, the Advanced riders may have showed active emotional control during the competition. Mahoney et al. (1983) reported that the more successful athletes tended to view anxiety as energising and utilise it for effective performance. Analysis of the riders' interpretation of anxiety as facilitative to performance is undertaken in Section 5.6.

#### *5.4.5 Conclusion*

The results showed that the level of experience of the rider had an effect on the level of anxiety exhibited. Advanced riders experienced lower anxiety and higher self-confidence levels compared to Novice and Intermediate riders. Possible explanations for the reduced anxiety levels were the implementation of active emotional control or coping skills. Skill level affected the temporal patterns of multidimensional anxiety and self-confidence. This has implications for the type of stress management intervention and the time at which it occurs, that is pre-competition and/or during competition.

5.5 Multidimensional competitive state anxiety and performance of Novice, Intermediate and Advanced horse trials riders.

### *5.5.1 Introduction*

The effects of anxiety on sports performance, when perceived as detrimental, can be devastating to competitors. Athletes who were previously producing high standard performances in training, then as a result of anxiety, are unable to perform skills to such a high standard in competition. They may constantly make mistakes due to poor judgement, report disrupted attention (Nideffer, 1980), revert to very basic skills (Kubistant, 1986) or just perform “out of character”. Cratty (1973) stated that sports which formerly provided a release for anxiety may now tend to heighten anxiety in individuals due to the increased pressure that is placed on winning in both professional and amateur competitions.

Certainly, within sport nowadays, there is increased sponsorship, commercialisation and media coverage which put extra external pressure on athletes to win. Also inherent in sport are the natural stressors that the competition produces. Such stressors include the perceived readiness of the athlete for competition, performing in front of spectators and allowing themselves to be openly judged by others and previous competition outcome (Gould et al., 1984; Jones et al., 1990). These aspects of competition cause athletes to doubt whether they are able to produce a sufficient standard of performance “on the day”, or whether they can “hold out” under the stress of the competition.

When some individuals worry and become anxious they experience disruption and dysfunction (Csikszentmihalyi, 1975; Mahoney & Meyers, 1989; Martens et al., 1990). In some cases, the more worried the individuals become, the more anxiety they experience and the greater the degree of disruption to performance. This effect is exhibited by the Negative Thought Anxiety Cycle developed by Ziegler (1980), previously discussed in Section 2.3.2.

The anxiety-performance relationship has remained elusive. Research using the CSAI-2 to assess the relationship between multidimensional competitive state anxiety and performance has been equivocal (Gould et al., 1984; Jones et al., 1990; Martens et al., 1990). The sport of horse trials involves an immense amount of accuracy from the rider and confidence between the rider and horse (Section 5.1). If the rider is suffering from the detrimental effects of anxiety, his/her performance may deteriorate (see Section 2.3). Any incorrect judgement from the rider may also have serious consequences on the safety of themselves and their horse. For a detailed discussion of the research analysing the anxiety-performance, see Section 2.4.

Most sports competitions produce feedback to the performer about their performance during and after the competition. Sports such as gymnastics, diving, pistol shooting, decathlon and horse trials involve separate, distinct phases whereupon much information about performance is available to the performer. This knowledge of performance may affect how the individual perceives his/her performance expectancies for the future aspects of the competition and for the end result or placing. Decreases in performance expectancies are associated with increases in cognitive anxiety which may be exhibited by athletes upon a poor performance in a previous phase (Morris et al , 1981).

There is a need to study anxiety during competition and obtain information about the relationships between performance and subsequent anxiety levels for the next phase in a competition. Horse trials provide an ideal opportunity to assess anxiety during the phases of a competition. The aims of this study were to investigate the relationships between anxiety components, skill level and performance in horse trials. Additionally, the concept of feedback and its effect on future anxiety levels and performance is evaluated.

### *5.5.2 Method*

#### *Subjects*

An opportunity sample of 65 subjects was obtained. Subjects were competing in either Novice (n=24; 21 female, 3 male), Intermediate (n=18; 17 female, 1 male) and Advanced (n=23; 18 female, 5 male) BHS horse trials and were affiliated to the BHS Horse Trials Group. The subjects ages ranged and were not recorded as the researcher felt that the experience level of the subjects was a more important factor affecting state anxiety in this study.

#### *Measurement*

The researcher designed a questionnaire booklet for the subjects to complete during the horse trial. The booklet comprised of a title page, a page of instructions, four sections, which are explained in the following text and the CSAI-2 (Martens et al., 1990). A copy of the questionnaire booklet is in Appendix IV. Section 1 of the booklet required general information pertaining to skill level and level of competition. Section 2 asked the rider to state whether she/he had set a goal or target for each phase of the horse trial; dressage, show-jumping and cross-country. If a goal had been set then space was provided for details of the goal to be recorded. Section 3 required the subject to fill out a score table throughout the horse trial which recorded penalty scores for each phase.

Four copies of the CSAI-2 were enclosed and were to be completed prior to the dressage, show-jumping and cross-country phases of the event and one after completion of the event. The CSAI-2 was a modified version incorporating a scale of direction of anxiety ranging from facilitative or debilitating to performance (Jones, 1991). For further information and clarification of this scale see Section 5.6. For coherence, the direction data was not analysed in this present study but is analysed and presented in Section 5.6. The studies presented, therefore, follow the developments in multidimensional competitive state anxiety and its relationships to sports performance.

The instructions given for the completion of the CSAI-2 questionnaires were as follows:- *“Complete questionnaire (1) 1/2 hour before the dressage phase (please complete as close to 1/2 hour as is practical for you)”*. This instruction was the same for each of the other CSAI-2 questionnaires except for the final questionnaire which asked subjects to complete the questionnaire 1 hour after completing the event. This was to standardise the times at which competitors completed the questionnaires. It was, however, stressed to subjects to complete the CSAI-2 as close to 1/2 hour before each phase as was practical for them without significantly disrupting their pre-competition preparation and routines. It was recognised that some riders required more than 1/2 hour to prepare and warm up the horses and themselves for the phases. Riders would not be prepared to disrupt their routine or hinder their chances of performing to their best ability. Riders completed the questionnaires no more than 1 hour before the phases.

Section 4 of the booklet involved evaluation of the subject's performance. It consisted of questions which asked whether riders perceived they had achieved the goal they set for each phase; dressage, show-jumping and cross-country. Each question comprised of a four-point Likert response of 1, *“not at all”*, 2, *“somewhat”*, 3, *“moderately so”* 4, *“very much so”*. As with section 2, space was provided for subjects to give details of their evaluation if required. One final question in section 4 required subjects to record the extent to which they felt they were successful at the horse trial. Again, a four-point Likert response was incorporated ranging from 1, *“not at all successful”*, 2, *“somewhat successful”* 3, *“moderately successful”*, 4, *“very successful”*. Space was provided for more details of this evaluation.

### *Procedure*

The sample was obtained from horse trials throughout the Spring season, 1994. Prior to the horse trial, permission to proceed with testing was obtained from the organiser of the horse trial. The researcher arrived at 08.00h on the morning of the horse trial and arranged for the secretary to receive completed booklets at the end of the event whereupon the researcher would collect. The secretary and the organiser were shown

the letter of approval of the research from the Director of the BHS horse trials Group to confirm the research was legitimate and approved.

The researcher approached riders as they arrived at the event, introduced herself and explained the experimental protocol. Confidentiality was assured to riders. Riders who agreed to take part in the study were given the questionnaire booklet, a cover letter and a self-addressed envelope for the return of the questionnaire. Subjects were told that the researcher would collect questionnaire booklets from the secretary at 18.00h. The subjects name, section and number were recorded. This enabled the researcher to record their scores from the main score tables to use as a comparison to the score table in Section 3 of the questionnaire booklet. The returned booklets were collected from the secretary after completion of the horse trial. Questionnaires returned by post were received in the two weeks following the horse trial.

#### *Data Analysis*

The data were explored prior to each analysis for normality (Shapiro-Wilks test) and for variance (Levene test). If these tests were upheld then parametric statistical tests were used, such as, a two way analysis of variance with repeated measures were used. If the tests were not upheld then non-parametric statistical tests were used including Spearman Rank correlation, Kruskal-Wallis one way analysis of variance and Friedman-Two way analysis of variance.

#### *5.5.3 Results*

Seventy completed questionnaires were returned by subjects. Five of these questionnaire booklets were incomplete and were omitted from the analysis. The data were analysed with respect to CSAI-2 components and the interaction between CSAI-2 components and performance measures.

#### *CSAI-2 components*

Initially the CSAI-2 components were analysed separately from the performance measures. Correlations for the whole sample revealed significant positive correlations

for each CSAI-2 component between each phase of the horse trial. The correlation coefficients ranged from  $r = 0.32$  to  $r = 0.71$  ( $P < 0.05$  to  $P < 0.0001$ ). Hence, cognitive anxiety was positively related between each phase of the horse trial, as were somatic anxiety and self-confidence.

Correlational analysis revealed significant relationships between CSAI-2 components for each skill level group (Table 5.5.1). The intercorrelations showed the positive correlations between cognitive and somatic anxiety and the negative correlations between both, cognitive anxiety and self-confidence, and somatic anxiety and self-confidence. In particular, the results showed the strong correlations between somatic anxiety and self-confidence for the dressage phase. There were low correlation coefficients for the cross-country phase for all skill level groups except for the correlation between cognitive anxiety and self-confidence for the Intermediate group. The correlations obtained were similar to intercorrelations obtained by other researchers (Martens et al., 1990).

**Table 5.5.1:** Intercorrelations between CSAI-2 components scores for Novice, Intermediate and Advanced riders.

Time of Assessment	Intercorrelations		
	CA and SA	CA and SC	SA and SC
Novice			
Dressage	0.18	-0.38	-0.34
Show-jumping	0.25	-0.34	-0.49 <sup>a</sup>
Cross-country	0.28	-0.34	-0.04
After event	0.34	-0.73 <sup>b</sup>	-0.56 <sup>b</sup>
Intermediate			
Dressage	0.42	-0.34	-0.75 <sup>b</sup>
Show-jumping	0.38	-0.46	-0.79 <sup>b</sup>
Cross-country	0.05	-0.47 <sup>a</sup>	-0.27
After event	0.14	-0.22	-0.33
Advanced			
Dressage	0.47 <sup>a</sup>	-0.27	-0.55 <sup>b</sup>
Show-jumping	0.50 <sup>a</sup>	-0.19	-0.62 <sup>b</sup>
Cross-country	0.23	-0.17	-0.19
After event	0.19	-0.35	-0.74 <sup>b</sup>

KEY:- <sup>a</sup> =  $p < 0.05$ , <sup>b</sup> =  $p < 0.01$ .

The data were analysed to investigate differences in CSAI-2 components between Novice, Intermediate and Advanced riders. Initially, means and standard deviations were calculated for each CSAI-2 component. Table 5.5.2 shows the mean scores and standard deviations for each CSAI-2 component measured at each time point in the competition; dressage, show-jumping, cross-country and after the event for the Novice, Intermediate and Advanced riders. Unusually, the Intermediate group reported the highest levels of cognitive and somatic anxiety throughout the phases of the horse trial. The Intermediate group also reported lower levels of self-confidence for the dressage, show-jumping and cross-country phases (Table 5.5.2).

**Table 5.5.2:** Means and standard deviations for CSAI-2 components prior to each phase of the horse trial for Novice, Intermediate and Advanced riders.

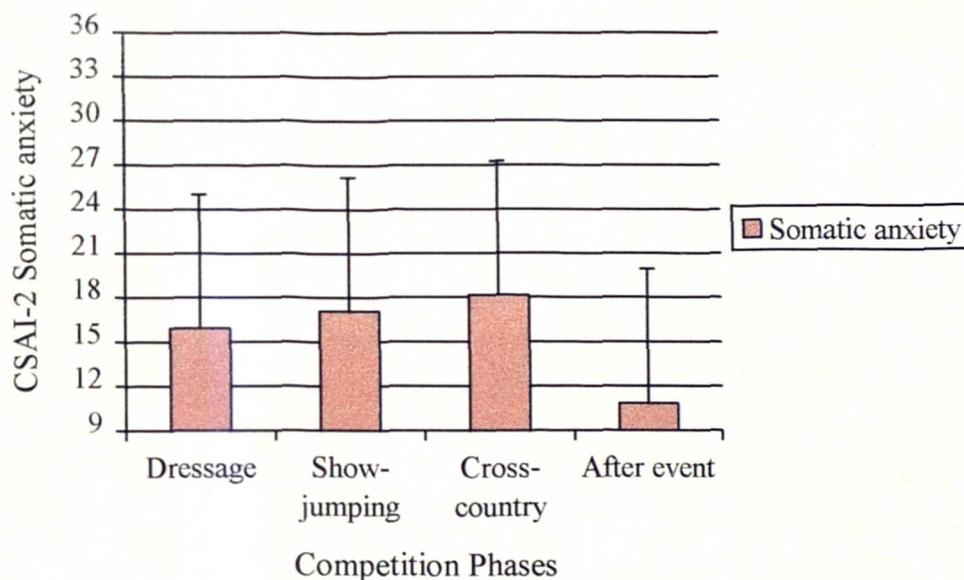
CSAI-2 Components		Novice		Intermediate		Advanced	
		Mean	± sd	Mean	± sd	Mean	± sd
<b>Dressage</b>	<b>CA</b>	18.83	4.94	20.17	6.26	18.00	5.94
	<b>SA</b>	15.83	5.04	16.94	7.10	15.95	6.42
	<b>SC</b>	21.17	5.47	20.94	5.29	22.59	6.24
<b>Show-jumping</b>	<b>CA</b>	18.79	5.19	22.39	5.27	19.17	5.81
	<b>SA</b>	15.33	4.40	19.28	5.36	17.17	5.46
	<b>SC</b>	21.13	4.88	17.89	6.76	20.70	5.86
<b>Cross-country</b>	<b>CA</b>	18.13	5.20	20.78	4.68	18.73	5.43
	<b>SA</b>	17.00	3.87	18.50	5.96	19.09	6.30
	<b>SC</b>	22.04	5.39	21.89	5.58	22.23	7.01
<b>After Event</b>	<b>CA</b>	13.71	4.86	16.08	7.03	13.79	4.13
	<b>SA</b>	11.38	4.37	11.08	3.09	10.00	1.56
	<b>SC</b>	28.33	6.43	30.23	4.87	27.26	7.45

KEY:- CA - Cognitive anxiety; SA - somatic anxiety; SC - self-confidence; ± sd - ± standard deviation.

Separate two analysis of variances with repeated measures were performed on each CSAI-2 component with skill level as the between factor and time (dressage, show-

jumping, cross-country, after event) as the within factor for the analysis. For the cognitive anxiety, no significant main or interaction effects were found. Hence, cognitive anxiety did not vary significantly between skill levels groups or through time (Table 5.5.2).

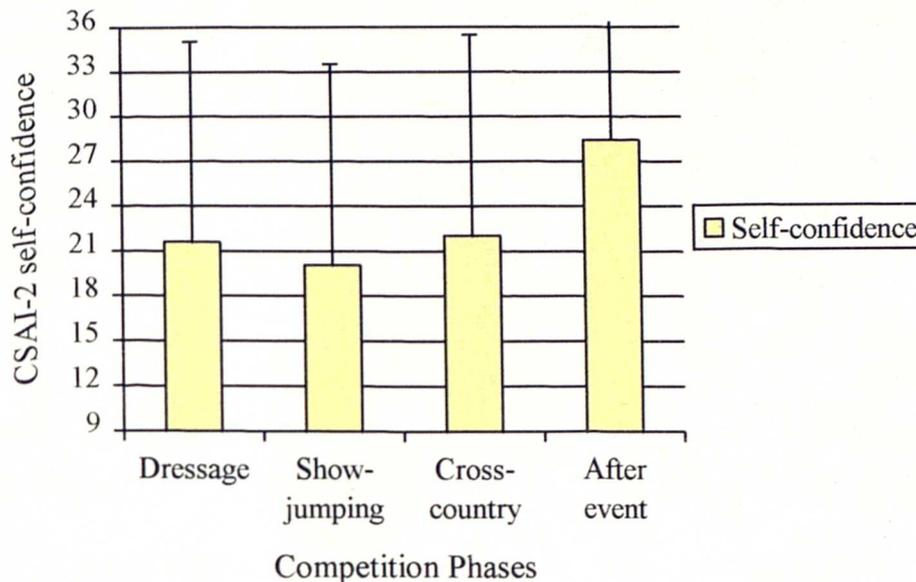
The somatic anxiety component was found to change significantly through the progression of the horse trial ( $F_{(3,153)}=39.3, P<0.0001$ ). Post hoc multiple comparisons with the Bonferroni method for correction of the alpha level revealed significant differences between the dressage and after the event ( $t = -8.07, P<0.0001$ ), the show-jumping and after the event ( $t = -8.50, P<0.0001$ ) and between the cross-country and after the event ( $t = -8.70, P<0.0001$ ). Graphical representation of the changes in somatic anxiety is shown in Figure 5.5.1.



**Figure 5.5.1:** The change in mean CSAI-2 somatic anxiety scores for the whole sample throughout the phases of the horse trial. Standard error bars are presented for each phase of the horse trial.

The analysis of the self-confidence component revealed a significant change in levels throughout the progression of the horse trial ( $F_{(3,156)}=30.59, P<0.0001$ ). Post hoc multiple comparisons indicated the significant changes in self-confidence were between the dressage and after the event ( $t = 7.35, P<0.0001$ ), the show-jumping and

cross-country ( $t = -3.0$ ,  $P < 0.005$ ), the show-jumping and after the event ( $t = 8.52$ ,  $P < 0.0001$ ) and the cross-country and after the event ( $t = 5.75$ ,  $P < 0.0001$ ) (Table 5.5.2 and Figure 5.5.2).



**Figure 5.5.2:** The mean CSAI-2 self-confidence scores with standard error bars for the whole sample throughout the phases of the horse trial.

*CSAI-2 components and performance measures*

Significant positive correlations were found between the cross-country performance score and the cognitive anxiety measured after the event ( $r = 0.53$ ,  $P < 0.05$ ) and between the total performance score for the event and the cognitive anxiety measured after the event ( $r = 0.65$ ,  $P < 0.01$ ) for the Novice group. No significant correlations were found for the Novice group between the dressage performance and anxiety components measured prior to the show-jumping or between the show-jumping performance and the anxiety components measured prior to the cross-country phase.

For the Intermediate group, show-jumping performance score was negatively related to the somatic anxiety measured prior to that phase ( $r = -0.49$ ,  $P < 0.05$ ). Between the phases, a negative relationship was found between the somatic anxiety prior to the dressage and the show-jumping performance score ( $r = -0.58$ ,  $P < 0.05$ ).

For the Advanced group, no significant relationships were found between total performance for the horse trial and the CSAI-2 components. For the show-jumping phase, however, a relationship was identified with the somatic anxiety ( $r = 0.45$ ,  $P < 0.05$ ) and the self-confidence prior to the phase ( $r = -0.58$ ,  $P < 0.01$ ). Cross-country performance score was also related to the somatic anxiety prior to this phase ( $r = 0.64$ ,  $P < 0.01$ ). Between the phases, a significant relationship was found between the somatic anxiety prior to the dressage phase and both the show-jumping and cross-country performance ( $r = 0.57$ ,  $P < 0.05$ ;  $r = 0.57$ ,  $P < 0.01$  respectively).

The actual performance scores were compared between the Novice, Intermediate and Advanced groups to ascertain the effects of skill level. One way analysis of variance revealed significant differences between each group for the dressage, show-jumping, cross-country and total performance scores. The means and standard deviations for these performances are presented in Table 5.5.3. Post hoc analysis identified the differences between the groups ( $P < 0.05$ ). For both the dressage and show-jumping phases, the differences were found between the Novice and the Intermediate group and between the Novice and Advanced group. For the cross-country phase and total performance score, the significant differences were found between the Novice and Advanced groups.

**Table 5.5.3:** The means and standard deviations between the Novice, Intermediate and Advanced groups for the performance scores in the phases of the horse trial.

Phases of the horse trial	Novice Performance scores		Intermediate Performance scores		Advanced Performance scores	
	Mean	± sd	Mean	± sd	Mean	± sd
<b>Dressage</b>	35.67	7.39	44.00	9.18	46.74	7.5
<b>Show-jumping</b>	4.71	5.05	10.61	7.49	6.39	7.15
<b>Cross-country</b>	11.23	11.31	38.76	37.30	26.2	23.59
<b>Total performance</b>	51.27	16.18	88.00	41.41	81.25	24.73

**NOTE:-** The scores presented in this table are penalty scores. Hence, the lower the score the better the performance.

Table 5.5.3 indicated the decreased performance for the Intermediate group in comparison to the Advanced group for the show-jumping, cross-country and total performance score. The novice were consistently better throughout the horse trial than the other two groups.

The perceived success scores were obtained from the competition evaluation form in the “competition assessment booklet”. Correlations between the perceived success for each phase and the CSAI-2 component scores for that phase were analysed for each skill level group. The Bonferroni correction method was applied to control for Type I error associated with multiple correlations.

For the novice group, a significant positive relationship was found between the self-confidence prior to the dressage phase and the perceived success of that phase ( $r=0.48$ ,  $P=0.018$ ). Correlations were found between the phases of the horse trial. Specifically, a positive relationship was found between the perceived success for the dressage phase and the level of self-confidence prior to the show-jumping phase ( $r=0.53$ ,  $P=0.008$ ). Also, the perceived success for the show-jumping phase was strongly and positively related to the somatic anxiety prior to the cross-country phase ( $r=0.49$ ,  $P=0.014$ ).

The results for the Intermediate group were very erratic. Only one correlation was found between the perceived success for the show-jumping and the perceived success for the total performance ( $r=0.75$ ,  $P<0.0001$ ).

For the Advanced group, correlations were found between phases. Perceived success for the cross-country phase was most strongly correlated with the perceived success for the total performance ( $r=0.54$ ,  $P=0.007$ ). The level of self-confidence prior to the show-jumping was positively correlated with the perceived success in the show-jumping phase ( $r=0.53$ ,  $P=0.009$ ). Further, the perceived success for the show-jumping phase was then positively correlated with the level of self-confidence prior to the cross-country phase ( $r=0.51$ ,  $P=0.016$ ).

The perceived success was analysed between the Novice, Intermediate and Advanced groups via Kruskal-Wallis one way analysis of variances. No significant differences were found between the Novice, Intermediate and Advanced groups for perceived success in the dressage, show-jumping and cross-country phases and for the total horse trials performance.

#### *5.5.4 Discussion*

##### *CSAI-2 components*

The positive correlations for cognitive and somatic anxiety and self-confidence throughout the horse trial emphasised the interactions between the phases of the horse trial. High levels of cognitive and somatic anxiety for the dressage phase may also produce subsequent increases in cognitive and somatic anxiety for the show-jumping phase and so on. This may be explained by the level of trait anxiety. Individuals who are high in trait anxiety are predisposed to be generally anxious and therefore would exhibit corresponding levels of state anxiety in the other phases of the horse trial. It may also be explained by the natural stress placed on the athlete during a competition.

The intercorrelations revealed strong negative correlations between somatic anxiety and self-confidence for the dressage phase in both the Intermediate and Advanced skill level groups. The Novice group was approaching significance. An explanation for the result was the rider's perceptions of increased somatic anxiety as causing possible performance decrements for the dressage phase. Increases in tension as a result of anxiety can cause the rider to ride very stiffly and with an incorrect body position. Lockhart (1990) emphasised that muscle tension changes in the rider produce enough stimuli to produce increases in muscle tension and physiological changes in the horse. This will produce symptoms such as a short, staccato stride which lacks suppleness and rhythm. These performance decrements lead to reduced performance for the dressage phase which requires smooth, supple and rhythmic movements from the horse. Consequently, an increased level of muscle tension was acknowledged by riders and caused the decrease in confidence levels as rider's perceived the somatic anxiety as detrimental to performance.

The low correlations for the cross-country phase may be explained by the variation in reported levels of cognitive and somatic anxiety and self-confidence. Large standard deviation values were obtained for each group, particularly the Advanced group in the cross-country phase and could account for the lack of correlation between CSAI-2 components. The cross-country phase was experienced very differently by riders. Some riders experience the cross-country as 'nerve-racking', whereas other riders experience 'excitement and exhilaration' when competing in the cross-country. Analysis of the direction dimension of anxiety may prove more beneficial, where the perception of levels of anxiety are experienced as facilitative or debilitating to performance (Jones et al., 1993).

The intercorrelations found in the present study were similar to other studies (Gould et al., 1984; McAuley, 1985; Martens et al., 1990) The anxiety reactions experienced by horse trials rider were similar to other sports, for example; volleyball and collegiate golfers.

The Intermediate group reported the highest levels of cognitive and somatic anxiety and lowest levels of self-confidence in general throughout the competition phases of the horse trial and after the horse trial. It was not clear why these results were found. It was possibly due to the within group variability. Future research would need to assess the rider's skill level more carefully to ensure the variability within the group was reduced. Although the Intermediates experienced the highest levels of anxiety it would be interesting to analyse the rider's perceptions of this anxiety as facilitative or debilitating to performance (Jones et al., 1993). It has been suggested that some athletes experience anxiety as producing positive effects on their performance (Mahoney et al., 1983). This analysis was undertaken in Section 5.6.

The analysis of CSAI-2 components between the skill level groups revealed no significant group effect for cognitive anxiety. These results did not support the findings obtained in Section 5.4 where the Advanced group experienced lower anxiety levels and higher self-confidence levels than the Intermediate group, and the

Intermediate group experienced lower anxiety and higher self-confidence than the Novice group. Martens et al. (1990) also found significant differences between low skilled athletes and high skilled athletes for each CSAI-2 component. Again, the within group variability and the sample of Intermediate riders may have produced the lack of significant differences between the groups. Future research would need to assess skill level and the direction dimension of anxiety as facilitative or debilitating to performance.

The cognitive anxiety did not differ between the Novice, Intermediate and Advanced groups, but was high throughout the competition for all groups. This was in accordance with research that indicated that cognitive anxiety levels were high for the competition as they related to the performance expectations for the competition (Morris, Davis & Hutchings, 1981; Gould et al., 1984; Martens et al., 1990).

Cognitive anxiety remained high after the completion of the horse trial. This result was possibly related to the rider's continuing concern regarding their performance and its possible implications for future performance expectations. Karteroliotis and Gill (1987) found decreases in cognitive anxiety in the post competition period. However, they acknowledged that their study involved little ego-involvement which could have reduced the levels of stress experienced by the subjects. McAuley (1985) found that performance was a significant predictor of cognitive anxiety. It is plausible that a poor performance can lead to a high level of anxiety in the post competition period.

The somatic anxiety was high throughout the competition and then found to decrease significantly after the horse trial. The high levels of somatic anxiety were in accordance with the previous studies in this thesis (Section 5.3, and 5.4) and other research (Jones & Cale, 1989). Somatic anxiety was suggested to be related to physiological arousal which increased immediately prior to the competition (Morris et al., 1981; Martens et al., 1990). The decrease in somatic anxiety was related to the removal of the stressor (the competition). The lack of difference in somatic anxiety

for the different skill levels was in contrast to Section 5.4. It was possible that the group variability caused this lack of differences.

Low levels of self-confidence were reported during the competition. Again these results were in accordance with research (Katerotiolis & Gill, 1987, Martens et al., 1990) where it was suggested that self-confidence was also related to performance expectations. Riders were subjected to the natural stressors of the competition and may have experienced doubt in their ability for the competition. The lack of differences between the groups was possibly due to the within group variability in CSAI-2 scores.

#### *CSAI-2 components and performance measures*

The correlations between CSAI-2 components and actual performance scores revealed that the performance of the Novice and Advanced riders were negatively affected by increases in anxiety and decreases in self-confidence. These results occurred for the cross-country and total performance scores for the Novice riders, and for the show-jumping and cross-country performance scores for the Advanced riders. The performance of the Intermediate riders was positively affected by increases in somatic anxiety in the show-jumping. To understand fully the positive effects for the Intermediate group, analysis of the direction dimensions of anxiety is required (see Section 5.6).

For the Novice group, the results showed that as cross-country performance and the total performance decreased the cognitive anxiety measured after the event increased. This result was in agreement with Martens et al. (1990) who suggested that an immediately preceding performance may have a greater influence on anxiety states than the effect of anxiety states on performance. Also, McAuley (1985) indicated that performance was a predictor of post-competitive cognitive A-state. The increase in cognitive anxiety after the competition was probably related to the future performance expectations for the Novice riders (Morris et al., 1981).

Between the phases, the Intermediate group reported that high levels of somatic anxiety in the dressage phase created a positive effect for the show-jumping performance. For the Advanced group, high levels of somatic anxiety prior to the dressage phase produced negative effects on the performance in both the show-jumping and cross-country phases. These results suggested the need to again analyse the direction dimensions to assess how riders were perceiving levels of competitive state anxiety (Jones et al., 1993). The results also suggested the interaction between the riders psychological state in different phases of the competition. It was possible that a high level of somatic anxiety prior to the dressage resulted in high levels of somatic anxiety throughout the competition which in this case benefited the Intermediate riders and negatively affected the Advanced riders.

Relationships were anticipated between dressage performance and anxiety prior to the show-jumping and also between the show-jumping performance and anxiety prior to the cross-country. However, no relationships were found. A possible explanation was the increased levels of self-confidence after good performances and high levels of perceived success in the previous phase.

The results for the relationships between perceived success and the CSAI-2 components revealed more positive relationships than for the actual performance scores. The suggestion that feedback regarding performance during the competition was a significant predictor of the subsequent anxiety and confidence levels was supported in this study. The Novice riders perceived success for the dressage was strongly related to the level of self-confidence prior to the show-jumping phase. Similarly, the perceived success for the show-jumping phase was strongly related to the self-confidence prior to the cross-country phase. Self-confidence was found to be related to perceived ability and performance expectations (Gould et al, 1984; Martens et al., 1990; Jones et al., 1990). If the rider perceives he/she has performed well in one phase of the competition, the increase in self-confidence for the other phases of the competition are inevitable. The increased levels of self-confidence as a result of

perceived success may have combated the negative effects of anxiety (see Section 6.1).

The significant results for the Intermediate group were few. The results suggested that the level of perceived success was the strongest indicator for perceived success for the horse trial. Consequently, it was possible that the Intermediate group regard the show-jumping phase as the most crucial phase of the horse trial.

Similar to the Intermediate group, the Advanced group perceived the show-jumping as a crucial phase. However, the Advanced group perceived the self-confidence prior to the phase as contributing to the perceived success of the show-jumping and subsequently, perceived the success in the show-jumping phase to contribute to increased levels of self-confidence for the cross-country phase. The Advanced group perceived the cross-country phase as most important in determining the perceived success of the horse trial.

The intercorrelations again supported the interaction between psychological states throughout the horse trial phases. The perceived success was a key element for anxiety and self-confidence levels for the skill level groups, however, slight differences occurred between each group.

In the present study no differences were found between each skill level group for the performance in the phases of the horse trial and the total horse trials performance. It was not clear why there was a lack of differences. Riders may not always participate in a horse trial for the sole aim of winning. Sometimes, riders perceive a competition as a training session prior to other competitions. Consequently, a rider may perceive success to be high when the actual performance score in comparison to other competitors and the placing achieved was poor. In this present study, a possible explanation for the lack of differences between the groups was due to the lack of standardisation of the goals for each phase of the competition. The level of within group variability may also have contributed to the lack of differences.

### 5.5.5 Conclusion

The study showed the temporal patterning of CSAI-2 components in agreement with present research and as shown in Section 5.4. The results showed the interaction between the phases of the horse trial in terms of the levels of anxiety and self-confidence experienced by the riders and their actual performance and perceived success.

With regard to anxiety and performance it was concluded that total performance scores had an effect on post competition cognitive anxiety for the Novice group. Somatic anxiety was positively related to performance for the *Intermediate group* whereas for the Advanced group it was negatively related to performance. The study found differences between performance for the three groups, however, due to the lack of results between anxiety and performance it was suggested that future analysis encompasses measures of perceived success and the direction dimension of anxiety.

The results in this study failed to find differences between the skill level groups in terms of perceived success. Within group variability may have caused these lack of differences. Again, future research needs to assess the perception of anxiety as facilitative or debilitating to performance and the relationship of this perception to performance and perceived success. The fluctuations in intensity levels of anxiety between Section 5.4 and the present study also suggest the need to analyse the direction dimensions of anxiety.

## 5.6 Investigation into intensity and direction of competitive state anxiety and performance in Novice, Intermediate and Advanced horse trials riders.

### 5.6.1 Introduction

State anxiety is dependent on the individuals' perception and appraisal of the threat of a stressor (Spielberger, 1989). This perceived threat evokes a state anxiety reaction which may then affect sports performance. Of greater importance, however, is the individuals' interpretation of this level of anxiety as beneficial or detrimental to their sports performance. Many athletes report perceiving the anxiety they experience as energising and preparatory for competition. The following quote from a Novice Event rider talking about the cross-country phase of the horse trial illustrates this point.

'...but this is an area where I need to have my blood up to ride the cross-country. If I don't have the anxiety to help then I don't perform as well. If I'm nervous prior to the cross-country, it helps me a lot...when I get in the box ready for the cross-country and I am nervous and the anxiety's there, that actually helps, that gets my blood running and I need to have that to perform better. You don't compete very well in the cross-country if you haven't got that extra bit of nerves'.

On the other hand, many athletes who perceive anxiety levels as detrimental, experience a decrement in performance associated with the negative symptoms of anxiety, such as disrupted attention, negative thoughts and increased muscle tension (Morris et al., 1981). Alpert and Haber (1960) identified the direction of anxiety and distinguished between anxiety which facilitated performance or debilitated performance in achievement situations. Mahoney et al. (1983) found that less successful athletes suffered from the detrimental effects of anxiety and lack of control of anxiety, whereas more successful athletes viewed anxiety as energising and as a means of enhancing sports performance. Carver and Scheier (1988) also identified between facilitation and dysfunction as a result of anxiety. They emphasised in their control-process model of anxiety, that the difference between the facilitative or dysfunctional effect was the individual's expectancies (favourable or unfavourable) to cope with the anxiety and complete the action.

Jones (1991a) developed the direction dimension of anxiety in the area of Sport Psychology. He proposed that the CSAI-2 essentially measures the intensity of multidimensional competitive state anxiety and did not take into consideration the directional perceptions. Hence, a modified version of the CSAI-2 incorporating a direction scale has been developed by researchers (Jones and Swain, 1992; Jones et al. 1993). Refer to Appendix IV for a copy of this questionnaire in the questionnaire booklet used for Section 5.6 . The underlying reason for the inclusion of the direction scale on the CSAI-2 stems from the realisation that high levels of anxiety are not always considered as detrimental to performance by the individual (Jones et al., 1993). The inclusion of the direction scale for the self-confidence component of the CSAI-2 is also based on the assumption that individuals may perceive varying levels of self-confidence as beneficial or detrimental to performance. Notably, high levels of self-confidence may be perceived as over-confidence and complacency, thus being potentially detrimental to performance.

Jones et al. (1993) investigated the direction of anxiety in a sample of gymnasts. The findings showed no difference between poor and good performance groups in terms of anxiety and self-confidence levels. The results showed that the good performance group reported their cognitive anxiety intensity as more facilitative and less debilitating to performance than the poor performance group.

Jones, Hanton and Swain (1994) utilised the modified CSAI-2 in a study of swimmers. Again, there was no difference in anxiety intensity between elite and non-elite swimmers. The elite swimmers interpreted both cognitive and somatic anxiety as more facilitative to performance than the non-elite swimmers. In the non-elite group, swimmers who reported their anxiety as debilitating experienced higher levels of anxiety than those who reported the anxiety as facilitative. This distinction was not observed in the elite group. The evidence suggested that the distinction between intensity and direction dimensions of anxiety will provide an important development in the understanding of multidimensional competitive state anxiety and its effect on performance.

The aim of this study was to evaluate the perceived direction of anxiety by Novice, Intermediate and Advanced riders as facilitative or debilitating to performance. The intensity and directions dimensions of anxiety and their effect on performance measures will be examined in the context of horse trials. Important implications for stress management intervention is anticipated from this study. Data collection for this study was incorporated in the questionnaire booklet used in Section 5.5. However, the analysis and write-up is separated into two sections. Firstly, Section 5.5 which involved the intensity of anxiety and its relationship to performance. Secondly, the present section which analyses intensity and direction of anxiety and its relationships with performance. This format followed the progression of the development of anxiety theory.

### *5.6.2 Method*

#### *Subjects*

An opportunity sample of 65 subjects was obtained. Subjects competed in BHS horse trials at a Novice level (n=24), Intermediate level (n=18) and an Advanced level (n=23). Subjects were affiliated to the BHS Horse Trials Group and were based throughout Great Britain. The sample was the same sample as presented in Section 5.5.

#### *Measurement*

The data collection in this study incorporated the use of the questionnaire booklet from Section 5.5 (see Appendix E). The modification to the CSAI-2 questionnaire involved the addition of a direction scale (Jones, 1991). The scale ranged from -3 (*very detrimental*) to +3 (*very beneficial*) and subjects rated, on this scale, the degree to which the intensity of anxiety they experienced affected their performance (Jones et al., 1993). Terminology used by researchers (Jones and Swain, 1992; Jones et al. 1993) regarding the direction scale was "*very debilitating*" and "*very facilitative*". The researcher in this present study perceived the terms "*very detrimental*" and "*very beneficial*" as providing a clearer meaning for the subjects without altering the meaning of the questionnaire. A possible range of scores for the direction dimension for each subscale of the CSAI-2 is -27 to +27.

### *Procedure*

The procedure is the same as the previous study (see Section 5.5.2).

### *Data Analysis*

Data analysis methods are the same as the previous study (see Section 5.5.2). Relationships were investigated between CSAI-2 components intensity and direction scores, actual performance scores and perceived success.

### *5.6.3 Results*

#### *CSAI-2 Components*

The direction dimension scores for the CSAI-2 components were first analysed separately. Correlational analyses investigated the relationships between intensity and direction scores for cognitive anxiety, somatic anxiety and self-confidence. Competition average CSAI-2 scores were obtained from the CSAI-2 scores for the dressage, show-jumping and cross-country phases. The competition average CSAI-2 scores were used in the correlational analysis.

The correlations between CSAI-2 intensity components were significant (Table 5.6.1). These results were in accordance with the correlation coefficients identified by other research (Martens et al., 1990). The correlations between the direction scores for the CSAI-2 components were significant and positive (Table 5.6.1). Correlations between the intensity and direction scores revealed significant, positive correlations between self-confidence intensity and cognitive anxiety direction ( $r=0.41$ ,  $P<0.01$ ) and somatic anxiety direction ( $r=0.49$ ,  $P<0.01$ ). These findings supported Jones et al. (1993). Negative correlations were found between self-confidence direction and cognitive anxiety intensity ( $r=-0.33$ ,  $P<0.01$ ) and somatic anxiety intensity ( $r=-0.39$ ,  $P<0.01$ ). Increases in both cognitive anxiety and somatic anxiety intensity was perceived by riders as more debilitating to performance ( $r=-0.33$ ,  $P<0.05$ ;  $r=-0.55$ ,  $P<0.01$ ). Riders perceived increases in self-confidence intensity as facilitative to performance ( $r=0.72$ ,  $P<0.01$ ).

**Table 5.6.1:** Intercorrelations between CSAI-2 components scores

	CA direction	SA intensity	SA direction	SC intensity	SC direction
CA intensity	-0.33 <sup>a</sup>	0.33 <sup>b</sup>	-0.24	-0.3 <sup>a</sup>	-0.33 <sup>b</sup>
CA direction		-0.14	0.57 <sup>b</sup>	0.41 <sup>b</sup>	0.53 <sup>b</sup>
SA intensity			-0.55 <sup>b</sup>	-0.43 <sup>b</sup>	-0.39 <sup>b</sup>
SA direction				0.49 <sup>b</sup>	0.62 <sup>b</sup>
SC intensity					0.72 <sup>b</sup>

KEY:- <sup>a</sup> = P<0.05; <sup>b</sup> = P<0.01

Correlations were found between cognitive anxiety intensity throughout the competition and cognitive anxiety intensity after the competition ( $r=0.46$ ,  $P<0.01$ ). The result suggested that increased cognitive anxiety during the competition also led to increased cognitive anxiety after the competition. It would be necessary to look at performance to assess the link between these competition anxiety variables.

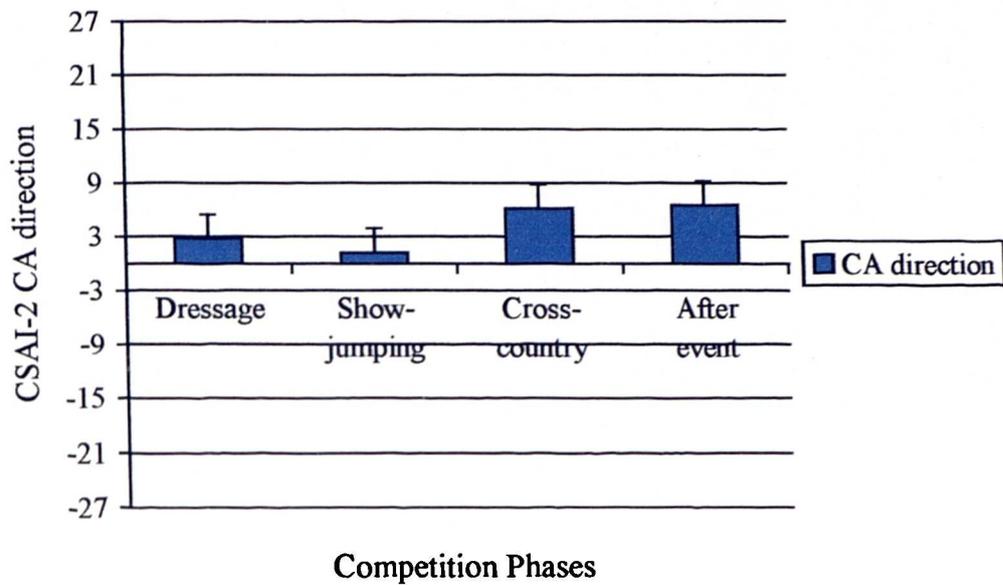
Analysis of the correlations between phases for the Novice group revealed a strong positive correlation between the cognitive anxiety direction score prior to the dressage phase and the somatic anxiety direction score prior to the dressage phase ( $r=0.55$ ,  $P<0.01$ ). For Novice riders, the perception of cognitive anxiety as facilitative to dressage performance was strongly related to the perception of somatic anxiety as facilitative to dressage performance.

The direction scores were analysed for differences between the Novice, Intermediate and Advanced groups. The means and standard deviations of both the intensity and direction scores of the CSAI-2 components are shown in Table 5.6.2. The direction scores reported by the Novice, Intermediate and Advanced groups were positive. Exceptions to this were the perception of cognitive anxiety as debilitating to dressage and show-jumping, and the perception of somatic anxiety was debilitating to show-jumping performance, by the Intermediate riders. These debilitating scores coincided with the highest cognitive anxiety and somatic anxiety intensity scores reported by the three groups. Large standard deviation scores were obtained for the direction scores ranging from 7.66 to 12.73.

**Table 5.6.2:** The means and standard deviations for the intensity and direction scores for CSAI-2 components between the Novice, Intermediate and Advanced groups.

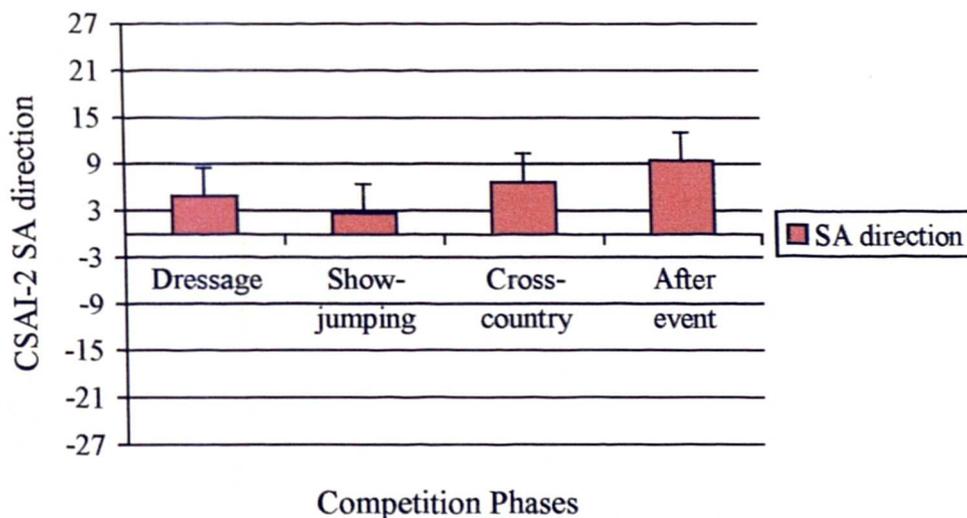
CSAI-2 components	Novice		Intermediate		Advanced		
	Mean	± sd	Mean	± sd	Mean	± sd	
CA intensity -	dressage	18.83	4.94	20.17	6.2	18.00	5.94
	show-jumping	18.79	5.19	22.39	5.27	19.17	5.81
	cross-country	18.13	5.20	20.78	4.68	18.73	5.43
	after event	13.71	4.86	16.08	7.03	13.79	4.13
SA intensity-	dressage	15.83	5.04	16.94	7.10	15.95	6.42
	show-jumping	15.33	4.40	19.28	5.36	17.17	5.46
	cross-country	17.00	3.87	18.50	5.96	19.09	6.30
	after event	11.38	4.37	11.08	3.09	10.00	1.56
SC intensity-	dressage	21.17	5.47	20.94	5.29	22.59	6.24
	show-jumping	21.13	4.88	17.89	6.76	20.70	5.86
	cross-country	22.04	5.39	21.89	5.58	22.23	7.01
	after event	28.33	6.43	30.23	4.87	27.26	7.45
CA direction -	dressage	1.73	9.60	-0.17	10.43	6.65	9.30
	show-jumping	2.45	7.66	-4.28	9.52	5.38	11.64
	cross-country	5.4	10.40	4.93	7.74	8.12	9.69
	after event	9.31	11.02	6.30	9.20	2.83	7.91
SA direction -	dressage	4.00	9.87	3.83	14.73	6.70	12.54
	show-jumping	5.40	9.28	-2.61	9.31	5.00	11.56
	cross-country	7.05	11.0	6.06	10.35	6.77	10.49
	after event	12.50	11.30	11.3	11.12	3.91	8.23
SC direction -	dressage	8.27	8.73	7.94	11.54	12.4	9.62
	show-jumping	7.85	11.58	-1.27	14.76	9.72	9.84
	cross-country	8.75	10.04	10.50	9.90	13.47	9.15
	after event	13.75	12.73	11.44	11.41	5.00	8.85

Visual inspection of the mean scores suggested that the Advanced group perceived anxiety as more facilitative than either the Novice or Intermediate groups. Statistical analysis was undertaken to assess whether these differences were significant. Separate two way analysis of variances with repeated measures were performed on each CSAI-2 direction component. Post hoc multiple comparisons with the Bonferroni correction method assessed where the differences were. For the cognitive anxiety component (Figure 5.6.1), a significant difference in direction scores was found through the progression of the horse trial ( $F_{(2,52)}=5.27$ ,  $P<0.002$ ). The difference occurred between the show-jumping and cross-country phases ( $t=-4.34$ ,  $P<0.0001$ ) and between the dressage phase and after the event ( $t=2.85$ ,  $P<0.01$ ).



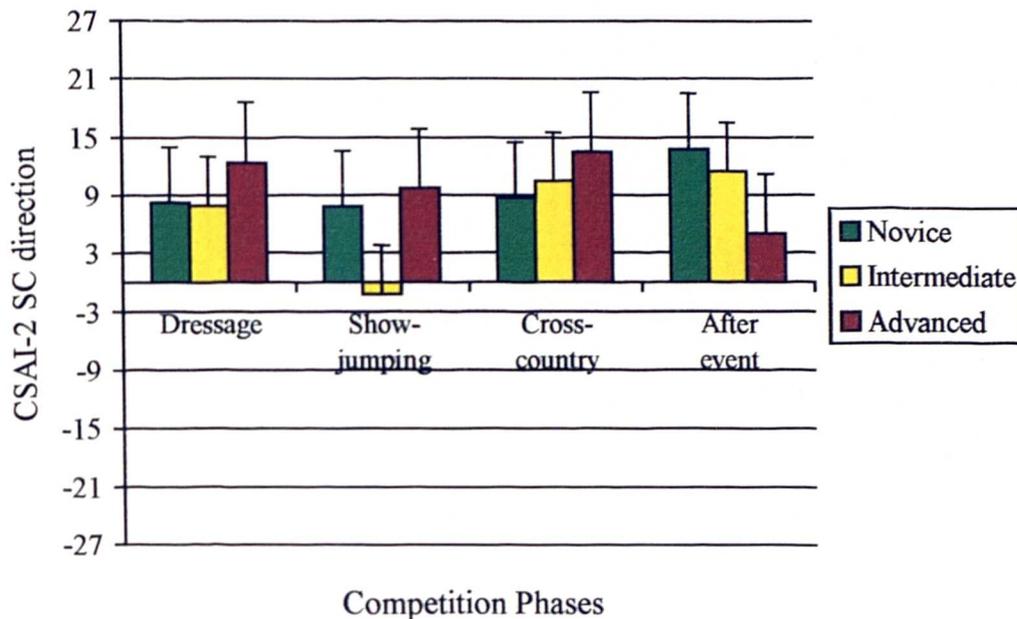
**Figure 5.6.1:** The mean CSAI-2 cognitive anxiety direction scores with standard error bars for the whole sample for the competition phases of the horse trial.

The somatic anxiety direction scores did not significantly differ between the skill level groups. However, a significant effect over time was found ( $F_{(2,52)}=4.76$ ,  $P<0.01$ ) (Figure 5.6.2). The differences occurred between the dressage and after the event ( $t=-2.86$ ,  $P<0.01$ ), between the show-jumping and the cross-country phases ( $t=-2.81$ ,  $P<0.01$ ) and between the show-jumping phase and after the event ( $t=2.79$ ,  $P<0.01$ ).



**Figure 5.6.2:** The mean CSAI-2 somatic anxiety direction scores with error bars for the competition phases of the horse trial for the whole sample.

Analysis of the self-confidence direction scores revealed a significant difference in the scores through the phases of the horse trial ( $F_{(2,52)}=4.98$ ,  $P<0.01$ ) and a significant interaction between skill level groups and time ( $F_{(6,52)}=4.87$ ,  $P<0.001$ ). Consequently, there was a significant difference in the group self-confidence score over time (Figure 5.6.3). The significant difference occurred between the Intermediate and Advanced groups between the show-jumping phase ( $P<0.05$ ) and after the event ( $P<0.05$ ).



**Figure 5.6.3:** The mean CSAI-2 Self-confidence direction scores with error bars for the competition phases between the Novice, Intermediate and Advanced groups.

#### *Relationships between CSAI-2 direction scores and performance measures*

Correlations were performed between the CSAI-2 direction component scores and the actual performance scores. No correlations were found between the total performance score and the CSAI-2 direction scores. For the perceived success scores, however, correlations were found between the perceived success for the total horse trial and the self-confidence direction score ( $r=0.28$ ,  $P<0.05$ ).

#### *5.6.4 Discussion*

##### *CSAI-2 components*

The correlations between cognitive anxiety and somatic anxiety intensity and direction scores revealed negative relationships, where increases in the level of anxiety were

perceived by horse trials riders as more debilitating to performance. These findings are particularly pertinent to horse trials performance. Increases in cognitive anxiety suggest increased negative thoughts, disrupted attention, worry and apprehension. As a result, the rider may experience poor judgement with regards to the horse trials performance. This can be particularly detrimental to the show-jumping and cross-country phases which require the rider to be accurate, bold and courageous to complete the technical courses of non-fixed and fixed obstacles. The increase in somatic anxiety encompasses increases in muscle tension, thus causing the rider to be stiff and tense (Morris et al., 1981; Lockhart, 1984). This effect can adversely affect the riders performance in relation to the requirements of the dressage phase.

The strong relationship between self-confidence intensity and self-confidence direction supported the result obtained by Jones et al. (1993). Based on this result and regression analysis findings, Jones et al. (1993) suggested that there did not appear to be much gained from measuring both intensity and direction dimensions of self-confidence. The researcher believed it was possible to obtain high self-confidence intensity scores which were perceived as debilitating to performance where the individual experiences the high levels of confidence as over-confidence or complacency regarding a performance. Consequently, the researcher continued to measure both the intensity and direction dimension of self-confidence. The continued use of the both scales enabled the researcher to assess when low levels of self-confidence as well as high levels were perceived as debilitating to performance (see Section 7.4.4).

The positive relationships between self-confidence intensity and the increased perception of cognitive anxiety and somatic anxiety as facilitative to performance provided evidence to suggest that levels of self-confidence are crucial to performance. These results supported those obtained by Jones et al. (1993) and those obtained in Section 5.5. Levels of self-confidence are related to the riders' perception of preparation, perceived ability, previous performances and performance expectations. It would be interesting to assess the relationships between the antecedents, self-confidence and performance within horse trials. The debate between self-efficacy theorists (Bandura, 1977) and anxiety-reduction theorists (Borkovec, 1976) as to

which is the cause and effect, anxiety reduction or increases in self-confidence, may be developed by the finding of the relationship between self-confidence intensity and cognitive and somatic anxiety direction (Jones et al., 1990). This suggestion is reiterated here with the important implications of the debate for stress management intervention and Applied Sport Psychology consultancy; is performance improved by a decrease in anxiety levels or an increase in self-confidence?

Future practical Sport Psychology needs to assess the perceived direction of anxiety and self-confidence prior to implementation of stress management intervention strategies. Maynard et al. (1995) emphasised the need to consider the perception of anxiety as facilitative or debilitating to performance. It is possible for athletes to perceive high levels of anxiety as facilitative to performance. Consequently, an anxiety reduction intervention programme may do more harm than good in such a case.

The CSAI-2 components were perceived as both facilitative and debilitating to performance by riders in this sample. Jones and Swain (1992) found that male competitors of rugby union, basketball, soccer and field hockey exhibited an over-all positive perception of the symptoms of anxiety in both low and high competitive groups. This study comprised mostly female riders and did not support Jones and Swain (1992) overall positive perception of anxiety. This area requires further investigation for concrete conclusions to be drawn regarding female subjects. Also comparison of the perceptions of anxiety and self-confidence symptoms between males and females should be undertaken, but in the same sport.

The Novice riders' perception of cognitive anxiety as facilitative to dressage performance was associated with a positive perception of somatic anxiety in this phase. This result leads to an important suggestion. The interaction between cognitive and somatic anxiety has been well documented. Cognitive anxiety in an individual may elicit somatic anxiety symptoms and vice versa; both affecting performance (Negative Thought Anxiety Cycle, Ziegler, 1980, see Section 2.3.2). However, it may also be possible to extend this theory to the direction dimension of cognitive and somatic anxiety components as well. Perceptions of cognitive anxiety as facilitative may also

evoke perceptions of somatic anxiety as facilitative to performance and vice versa. Further research is needed to test the theory more completely, for example between riders of different skill levels. Extending this suggestion, Jones and Swain (1995) have recently obtained results to indicate that an athletes predisposition to perceive anxiety as facilitative or debilitating to performance can be predicted. Thus, examination of the direction dimension of trait anxiety was undertaken.

Differences were found between the phases of the horse trial for cognitive and somatic anxiety direction. These results were between the competition phases and after the event and also between the show-jumping and cross-country phases. Cognitive and somatic anxiety were perceived to be more debilitating to performance for the show-jumping than the cross-country phase. Anecdotal evidence supported this finding, as many horse trials riders cite the show-jumping as being a particularly difficult phase (see Sections 5.2 and 5.3). The explanation for this is the level of accuracy and precision required for the phase. Increased levels of worry, negative thoughts, disrupted attention and muscle tension can cause decrements in performance in this phase.

Differences were found between the skill level groups and the phases of the horse trial. Specifically, the Intermediate group reported self-confidence to be less facilitative and more debilitating to performance than the Advanced group for the show-jumping phase. The Intermediate group perceived their self-confidence intensity as debilitating to performance for this phase. Martens et al. (1990) found differences between skill level groups for CSAI-2 intensity components. The findings of this study provide partial support for the difference between CSAI-2 direction scores between skill level groups, specifically the self-confidence component. Differences between skill level groups for the cognitive and somatic anxiety were observed, however, these were not significant. These results partially supported the differences between elite and non-elite groups of swimmers (Jones et al., 1994).

The large standard deviations for the mean direction scores in Table 5.6.1 showed the wide variance in riders perception of anxiety as facilitative or debilitating. This was in

accordance with Jones and Swain (1992) and Jones et al. (1993) where large variances in direction scores are also observed. Again, it emphasises the large differences between human perception and interpretation of situations, which is largely subject to the individuals' past experience. The influence of the environment and individual perception cannot be disregarded in interpretation of results and prediction of performance.

#### *Relationships between CSAI-2 direction scores and performance measures*

The results indicated that the direction score for self-confidence was related to the riders perceived success of the horse trial. No relationships were found between direction scores and actual performance. This finding suggested the important relationship between the riders' feeling of success and perceptions of self-confidence. Future research and stress management intervention must take into consideration the development of a positive attitude towards pre-competition psychological state.

Suggestions for the lack of significant results are as follows; firstly the sample size was small, particularly for the Intermediate group. Secondly the administration of the CSAI-2 up to 1 hour before the competition may not produce state anxiety levels. However, the data did show elevated cognitive and somatic anxiety and lowered self-confidence levels. Also, in comparison to other studies (Jones and Swain, 1992; Jones et al. 1993) where the CSAI-2 was administered 30 minutes before and 10 minutes before respectively, the mean direction scores obtained in this study were similar suggesting little differences in state anxiety upon administration times of the questionnaire.

#### *5.6.5 Conclusion*

The results supported the measurement of the direction dimension of multidimensional competitive state anxiety for horse trials. It was identified that it was possible to obtain a negative perception of self-confidence intensity. This was exhibited by the Intermediate group in the show-jumping phase. The Advanced group perceived cognitive and somatic anxiety and self-confidence levels to be more facilitative to performance than the Intermediate and Novice groups of riders. The difference

between the direction scores was statistically confirmed for the self-confidence direction scores.

The results identified self-confidence intensity and direction as a key element for performance in the phases of the horse trial and for perceived success. Future research needs to develop the present work by assessing differences in the perception of anxiety as facilitative or debilitating to performance between high and low performance groups. Also, to assess the sex differences in anxiety experiences, analysis of the perceptions of anxiety between males and females in the same sport is required. Finally, the findings of this study emphasise the need to consider both the intensity and direction dimensions of anxiety prior to the implementation of a stress management intervention programme. Implications for the type of intervention is available based on the levels and the individual perceptions of cognitive and somatic anxiety and self-confidence as facilitative or debilitating to performance in horse trials.

## 5.7 Summary

The results revealed the prevalence of multidimensional competitive state anxiety in horse trials. Section 5.3 showed different patterns of the components of anxiety throughout the competition and supported the literature. The patterns of cognitive and somatic anxiety and self-confidence as measured by the CSAI-2 were in accordance with the patterns experienced by athletes in other sports. The results also indicated the individuality in somatic anxiety responses and supported Borkovec (1976). Specifically, horse trials riders experienced butterflies, increased heart rate, muscle tension and increased perspiration during the horse trial.

Skill level was shown to have an effect on the anxiety reaction experienced by horse trials riders. Novice riders experienced higher levels of cognitive and somatic anxiety and lower levels of self-confidence than the Intermediate riders, who, in turn, experienced higher levels of cognitive and somatic anxiety and lower self-confidence than the Advanced riders. Interestingly, the Advanced riders showed more consistent

anxiety and self-confidence levels throughout the horse trial suggesting they employed coping skills to reduce the level of anxiety (Epstein & Fenz, 1965). This finding needs to be investigated further because the analysis of skill level on CSAI-2 components in Section 5.5 did not reveal the same findings as for Section 5.4. The lack of skill level differences in Section 5.5 were suggested to be related to the within group variability, particularly for the Intermediate group.

In Section 5.5 it was found that the Novice and Advanced riders were negatively affected by increases in anxiety and decreases in self-confidence for the show-jumping, cross-country and total performance of the horse trial. For the Novice riders, performance in the horse trial affected the level of post-competition cognitive anxiety and was in accordance with McAuley (1985) and Martens et al. (1990).

The perceived success in phases of the horse trial was identified as a key factor for subsequent anxiety and self-confidence levels. Specifically, an increased perception of success in one phase led to an increased level of self-confidence for the following phase. Perceived success was also more closely related to anxiety and self-confidence levels than actual performance scores, hence indicating the importance of the rider's interpretation of the performance.

The fluctuations in anxiety scores indicated the need to look at the rider's interpretation of the anxiety as facilitative or debilitating to performance. Jones et al. (1993) suggested that the lack of relationships between anxiety and performance was due to the usage of the intensity of anxiety and suggested the direction should also be measured. In accordance with Jones et al. (1990), increases in self-confidence were found to produce a more positive perception of cognitive and somatic anxiety. It was suggested that self-confidence was a key factor in the performance and perceived success in horse trials.

The need for anxiety control was highlighted with the finding that increases in cognitive and somatic anxiety were interpreted as more debilitating to performance by riders. Cognitive anxiety can detrimentally affect horse trials performance by

attentional narrowing (Nideffer, 1980), concentration disruption, errors in judgement and decreased information processing capacity (Carver & Scheier, 1988). Somatic anxiety can detrimentally affect horse trials performance by the increased tension and transfer of tension to the horse (Lockhart, 1990; Section 3.3.2; 5.1). Again self-confidence was found to be a key factor affecting performance as it was found to be significantly lower for the Intermediate than the Advanced group and changed significantly over time. Self-confidence was the lowest for the show-jumping phase (see Section 5.2 and 5.6).

The rider and horse interaction gained initial empirical support in Section 5.1. It is envisaged that future development of the RPQ can produce a psychometric tool used to predict anxiety levels and performances of riders via their perception of the interaction between themselves and the horse and their influence on the horse's performance. The findings of varied antecedents of anxiety and the rider's perception of the horse as important to the overall performance indicates the need to analyse the antecedents of anxiety in more depth. The causal attributions must also be assessed to explore links between anxiety and self-confidence and the reasons for performance in horse trials.

## CHAPTER 6

Investigation 2: Antecedents of anxiety and causal attributions of performance in horse trials.

## **6.0 Investigation 2: Antecedents of anxiety and causal attributions of performance in horse trials.**

The information obtained from investigation 1 highlighted the prevalence of anxiety in horse trials. It is necessary to explore what causes the horse trials riders to experience anxiety. This is encompassed in the study of the antecedents of anxiety in Section 6.1. To gain a holistic picture of the experiences of a horse trials rider during competition it is also necessary to obtain information regarding the causal attributions relating to competition performance.

### **6.1 Investigation into the antecedents of anxiety and performance in horse trials**

#### ***6.1.1 Introduction***

In the study of anxiety and its resultant effect on the performance of an individual some important questions can be raised? Why does an athlete become anxious? What is the cause of his/her nervousness? To answer these questions it is necessary to investigate the causes or antecedents of anxiety.

In the production of anxiety, an individual initially identifies something or someone as potentially threatening to their safety, pride or ego. The individual then appraises the situation and will experience a state anxiety reaction if the stressor is *perceived* as threatening (Spielberger, 1989) The emphasis is again on the individual's *perception* of the situation and hence suggests that antecedents will differ between people and situations (see Section 3.1).

There are many different causes of an individual's nervousness. People report causes such as; a fear of success or failure, fear of embarrassment, the possibility of injury, lack of preparation for the competition, exam or presentation, uncertainty of what is required of them, fear of social evaluation and the importance of the situation. The individual's interpretation of these causes as potentially threatening results in the state anxiety reaction evoked (Spielberger, 1989).

It is thought that antecedents of competitive state anxiety differ between different situations. Individual sports are thought to evoke a greater state anxiety reaction than team sports. Simon and Martens (1979) studied pre-competitive state anxiety in both sport and non-sport activities. They noted that athletes competing in individual sports such as gymnastics and wrestling reported higher pre-competition state anxiety than athletes in team sports such as football and hockey. The suspected reason for this difference is the greater potential for evaluation of the athlete's performance in one-to-one competitions.

The use of the CSAI-2 has greatly advanced our knowledge of competitive state anxiety in sport. Research has included the temporal patterning of multidimensional state anxiety (Gould, Petlichkoff & Weinberg, 1984); interrelationships between cognitive and somatic anxiety and self-confidence components of state anxiety (Gould et al., 1984; McAuley, 1985; Karteroliotis & Gill, 1987) and gender differences in state anxiety (Jones & Cale, 1989) and the intensity and direction dimensions of anxiety (Jones & Swain, 1992; Jones et., 1993). The CSAI-2 has also been used in research to identify the antecedents of multidimensional state anxiety components. In particular, investigation into whether different antecedents elicit different components of the CSAI-2 has been conducted. For a detailed discussion of the antecedents of anxiety, see Section 3.1.

The antecedents of CSAI-2 components were examined among elite intercollegiate middle-distance runners (Jones et al., 1990). Measurement included the Pre-Race Questionnaire (PRQ) which was developed by the researchers and assessed precursors of competitive state anxiety and self-confidence. Five factors emerged from the factor analysis of the PRQ; 1) *perception of readiness*, 2) *attitude towards previous performance*, 3) *perception of difficulty of position goal and whether the athlete thought he could achieve it*, 4) *the influence of the coach* and 5) *the suitability of weather and track conditions*. The results supported the predictions of Martens et al. (1990) that performance expectancies are more related to cognitive anxiety than somatic anxiety. It also provided partial support for the prediction that cognitive anxiety and self-confidence are elicited by the same antecedents. Specifically,

perceived readiness was a significant predictor of both cognitive anxiety and self-confidence. Attitude towards previous performance, however, predicted cognitive anxiety but failed to predict self-confidence.

In Equestrian sports the potential injury risk to both horse and rider, fear of failure, fear of embarrassment and perceived readiness may be important antecedents of pre-competition state anxiety. Horse trials is considered to be a high risk sport along with skiing and riding races (Coles, 1987). Many riders acknowledge the danger particularly when weather and course conditions deteriorate, resulting in a wet and slippery cross-country course. Some riders also perceive the spectators and the fear of embarrassment in front of them as a cause for increased worry about a competition.

*“(show-jumping) ...I just kept thinking “What will people think, I can’t even get him round the corner on the correct lead””.*

Novice horse trials rider.

The knowledge gained from the study of the antecedents of anxiety has implications for stress management intervention techniques. To help riders improve their performance it is necessary to understand the causes of their anxiety within the context of horse trials competition. The aim of this study was to assess the antecedents reported by riders using a modified version of the Pre-Race Questionnaire (Jones et al., 1990) and to investigate differences in these antecedents between riders of differing skill levels; Novice, Intermediate and Advanced. The PRQ was modified to be sport-specific to riders and thus provide a more realistic measure of antecedents in horse trials. An additional aim was to examine the relationships between antecedents and CSAI-2 components and performance.

### *6.1.2 Method*

#### *Subjects*

The study comprised 42 subjects (3 male and 39 female). Due to the small sample of male subjects, sex differences were not analysed. The sample consisted of Novice (n=25), Intermediate (n=10) and Advanced (n=7) riders. Subjects age ranged from 16-

40. Specific details of ages were not required as the aim was to assess differences in antecedents between skill levels. All subjects were affiliated to the BHS Horse Trials Group and competed under their rules. Subjects were tested at a one day BHS Horse Trial of Novice, Intermediate or Advanced level depending on their skill level.

### *Measures*

The data collection incorporated validated questionnaires and self-rating performance evaluation measures. They were collated in a 'questionnaire booklet' which was administered to subjects. The specific contents of the questionnaire booklet are described below:

*Pre-Event Questionnaire (PEQ)*: The PEQ was adapted from the PRQ (Jones et al., 1990) by the researcher to ensure adequate face validity for riders competing in BHS horse trials. The PRQ was originally designed to assess the antecedents of elite intercollegiate middle-distance runners (Jones et al., 1990) and hence required changes to the terminology so riders could respond to questions with regard to horse trials. Specifically, the word 'race' was changed to 'event' or 'horse trial' as required and 'coach' was changed to 'trainer'. For example, question 2 on the PRQ; 'How do you feel you have been performing in races over the last 4 weeks?' was changed to 'How do you feel you have been performing in horse trials for the last 4 weeks?'. These words were viewed as more sport-specific by horse trials riders. Prior to the administration of the questionnaires, an experienced horse trials rider assessed the PEQ for clarity of questions, appropriateness for horse trials competition assessment and face validity. A full copy of the PEQ is presented in Appendix V.

*Competitive State Anxiety Inventory - 2 (CSAI-2)*: The CSAI-2 is a sport-specific measure of multidimensional competitive state anxiety (Martens et al., 1990). It consists of three components; cognitive anxiety, somatic anxiety and self-confidence. The CSAI-2 has been widely used throughout the sport psychology research and is viewed as a valid measure of competitive state anxiety (see Section 5.3 for a detailed discussion of this questionnaire). The modified version of the CSAI-2 (Jones, 1991) was utilised in this study (see Section 5.6).

*Performance measures:* Actual penalty scores were obtained for each rider with the rider completing a score sheet after the horse trial. Perceived success measures were also obtained where the rider completed an evaluation form after the horse trial. Subjects were asked to rate their perceived success and the degree to which they had achieved their goal for the dressage, show-jumping and cross-country phases. The rating scale comprised a Likert type response scale ranging from 1 (*not at all*), 2 (*somewhat*), 3 (*moderately so*), 4 (*very much so*). Subjects were also asked to rate their level of success for the whole horse trial on the scale 1 (*not at all successful*), 2 (*somewhat successful*), 3 (*moderately successful*), 4 (*very successful*).

### *Procedure*

Subjects were required to complete the PEQ 1 hour before and the CSAI-2 1/2 hour before their start in the horse trial. These times for questionnaire administration were chosen to ensure that state anxiety levels were measured by the CSAI-2, yet also ensuring the least disruption to the subjects pre-competition schedule. The CSAI-2 was administered with the standardised instructions developed by Martens et al. (1990) to ensure honest responses and their indication of how they felt “*right now*”.

The CSAI-2 and the PEQ were administered only once prior to the whole horse trial even though the horse trials consists of three phases. The researcher felt it was too impractical for riders’ to complete both the CSAI-2 and PEQ prior to each phase of the horse trial due to the disruption of riders pre-competition routine.

### *Data analysis*

The mean and standard deviations for each item on the PEQ was compared to those obtained by Martens et al. (1990). The PEQ data were then categorised into the factors identified by Jones et al. (1990) from the factor analysis of the PRQ. Relationships between the PEQ factors, CSAI-2 components and performance measures were examined. Regression analysis examined the antecedents which predicted cognitive and somatic anxiety and self-confidence on the CSAI-2 and performance measures.

### 6.1.3 Results

The mean and standard deviations for each item on the PEQ are presented in Table 6.1.1 along with the mean and standard deviations obtained from the PRQ (Jones et al., (1990). Also presented in Table 6.1.1 are the mean and standard deviations for the CSAI-2 components obtained in this present study and those from Jones et al. (1990).

**Table 6.1.1:** The mean and standard deviation scores for the antecedent questionnaire items and the CSAI-2 components from the present study and from Jones et al. (1990).

Items	Present study		Jones et al. (1990)	
	Mean	± sd	Mean	± sd
Cognitive anxiety	20.40	4.97	19.86	4.65
Somatic anxiety	18.05	5.55	19.36	4.44
Self-confidence	20.62	5.63	21.50	4.32
Past 4 weeks training (item 1)	6.10	1.10	5.73	1.66
Past 4 weeks competitions (2)	6.25	1.53	5.76	1.47
Coach influence last 4 weeks (3)	7.28	1.18	5.92	1.47
How feel about position? (4)	6.14	2.35	5.32	1.91
Previous pos./pre-competition expect (5)	5.67	2.24	5.65	2.20
How feel about time/performance? (6)	6.07	1.87	5.55	2.12
Previous time/performance expect (7)	6.02	2.02	5.21	2.08
Coach influence last competition (8)	6.45	1.84	5.59	1.64
Important to do well (9)	6.79	2.08	6.36	1.27
Can you achieve pos. goal? (10)	6.06	1.58	6.43	1.43
How difficult to achieve pos. goal? (11)	5.39	1.80	6.01	1.89
Can you achieve time goal? (12)	6.34	1.51	6.34	1.14
How diff. to achieve time/performance goal? (13)	5.44	1.52	6.22	1.29
How well riding? (14)	6.29	1.27	5.89	1.62
Fatigue (15)	4.83	2.14	4.91	1.85
Physical readiness (16)	6.86	1.77	5.47	1.90
Mental readiness (17)	7.10	1.57	5.78	1.76
Suitability of weather (18)	6.27	2.07	5.58	2.24
Suitability of course (19)	6.95	1.61	7.49	1.37

The CSAI-2 scores indicated that the horse trials riders reported higher cognitive anxiety, lower somatic anxiety and lower self-confidence than the collegiate runners (Jones et al., 1990). The CSAI-2 components also differed from normative values (Martens et al., 1990). The PEQ values in this study were mostly larger than the values obtained by Jones et al. (1990). Horse trials riders reported perceiving their position goal and performance goal would be easier to achieve than compared to the

middle distance runners (item 11; PEQ:  $\bar{x} = 5.39$ ,  $sd = \pm 1.80$ ; PRQ:  $\bar{x} = 6.01$ ,  $sd = \pm 1.89$ ; Item 13; PEQ:  $\bar{x} = 5.44$ ,  $sd = \pm 1.52$ , PRQ:  $\bar{x} = 6.22$ ,  $sd = \pm 1.29$ ).

#### *Relationships between PEQ factors, CSAI-2 components and performance measures*

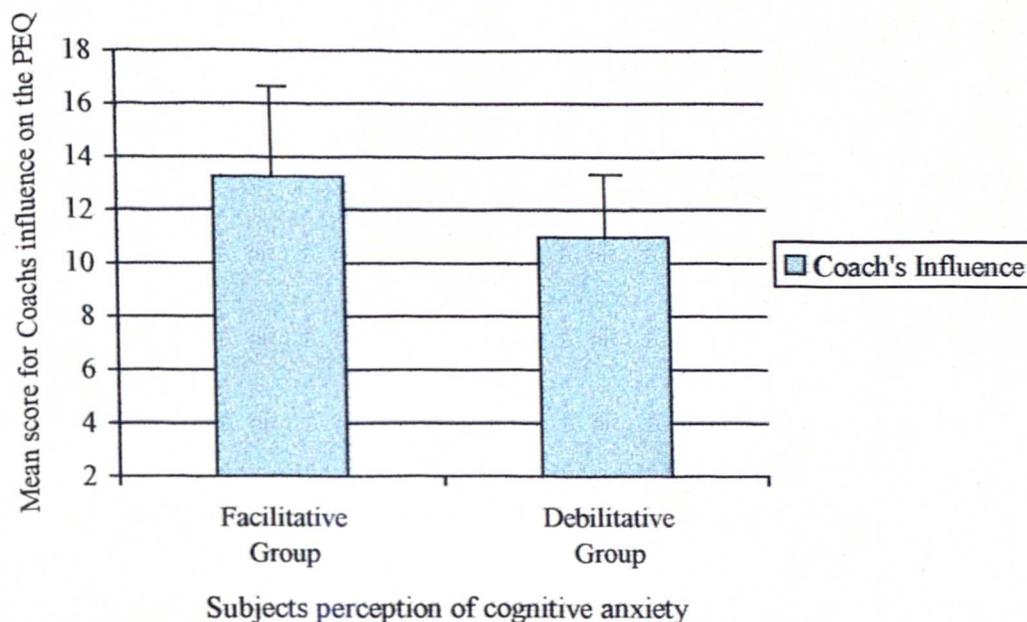
The items reported in Table 6.1.1 were categorised into the factors identified by Jones et al. (1990) namely; perceived readiness (*items 1, 2, 12, 14, 15, 16, 17*), attitude towards previous performance (*4, 5, 6, 7*), position goal (*10, 11*), coach influence (*3, 8*), external environment (*9, 18, 19*). These factors were used in all subsequent analysis.

The correlations between the CSAI-2 factors revealed moderate correlations between cognitive anxiety and somatic anxiety ( $r = 0.36$ ,  $P < 0.05$ ) and between somatic anxiety and self-confidence ( $r = -0.34$ ,  $P < 0.05$ ). No correlation was found between cognitive anxiety and self-confidence although the relationship was negative. These results partially support the intercorrelations obtained by Martens et al. (1990).

Spearman Rank correlational analysis was undertaken between the PEQ factors and the CSAI-2 components. Only one significant correlation was found between perceived readiness on the PEQ and self-confidence on the CSAI-2 ( $r = 0.49$ ,  $P < 0.01$ ). The correlations between factors on the PEQ and performance scores revealed a significant negative relationship between perceived readiness and show-jumping performance ( $r = -0.45$ ,  $P < 0.05$ ). Specifically, as perceived readiness increased, the show-jumping penalty score decreased, hence performance improved in this phase. A significant positive correlation was also found between position goal and dressage performance. As the riders perceived the position goal more difficult to achieve, their dressage performance decreased ( $r = 0.45$ ,  $P < 0.005$ ). Perceived readiness was strongly correlated with the riders' perception of success in the show-jumping phase ( $r = 0.5$ ,  $P < 0.05$ ).

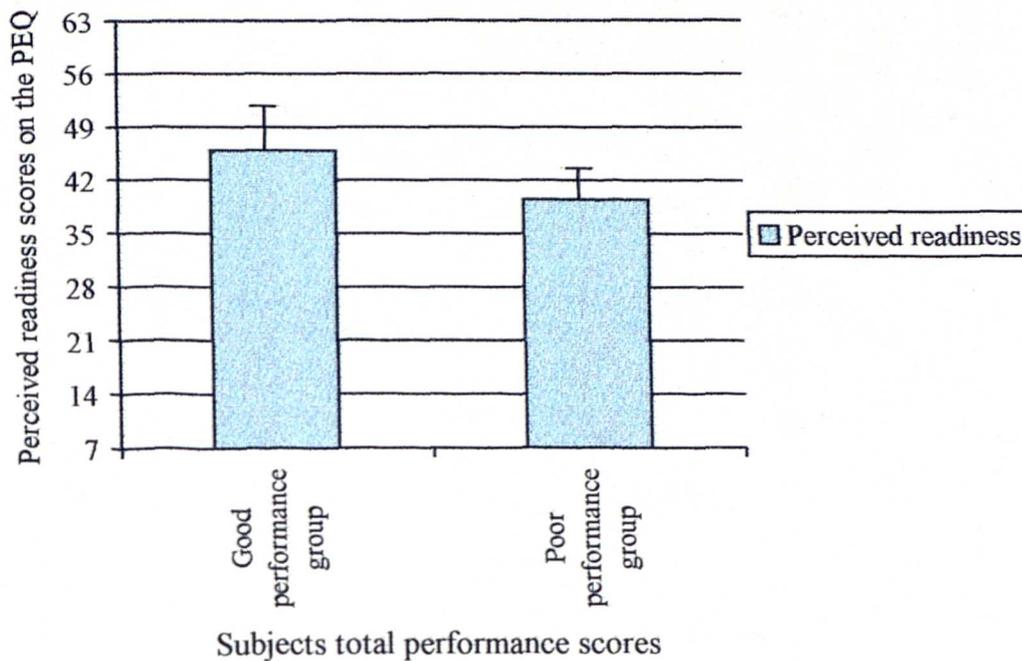
No differences were found in the PEQ factors between the Novice, Intermediate and Advanced riders. The PEQ results were analysed with regards to the riders' perception of cognitive anxiety as facilitative or debilitating to performance. Riders were split into two groups; those who perceived cognitive anxiety as facilitative to performance

(facilitative group;  $n=21$ ,  $\bar{x}=7.24$ ,  $sd=\pm 4.99$ ) and those who perceived cognitive anxiety as debilitating to performance (debilitative group;  $n=16$ ,  $\bar{x}=-5.88$ ,  $sd=\pm 3.28$ ). 5 riders were omitted from this analysis as insufficient data was available. A Mann Whitney U test revealed a significant difference between the cognitive anxiety direction scores for these two groups ( $W=136.0$ ,  $P<0.00001$ ). The PEQ factor, Coach's influence was scored significantly different between the facilitative group and the debilitating group ( $U=13.25$ ,  $P<0.05$ ) (Figure 6.1.1).



**Figure 6.1.1:** The mean score for the PEQ factor, coach's influence for the riders who perceived cognitive anxiety as facilitative and debilitating.

Analysis of the results assessed the differences in PEQ factors between good and poor performances. The sample was split into two groups depending on their total performance score. The scores for the good performance group ( $n=13$ ,  $\bar{x}=45.38$ ,  $sd=\pm 9.99$ ) was significantly different from the scores obtained for the poor performance group ( $n=14$ ,  $\bar{x}=100.40$ ,  $sd=\pm 36.78$ ;  $W=91.0$ ,  $P<0.00001$ ). 15 cases were omitted from this analysis due to insufficient data. The level of perceived readiness was found to differ significantly between the good and poor performance group ( $U=13.5$ ,  $P<0.05$ ) (Figure 6.1.2).



**Figure 6.1.2:** The differences in mean perceived readiness scores between the good and poor performance groups

*Regression analyses*

In order to establish which of the five PEQ factors best predicted the CSAI-2 components and total performance of the horse trial, separate stepwise multiple regression analyses were performed. The PEQ factors did not predict cognitive and somatic anxiety or self-confidence. Two of the five factors significantly predicted the total performance score for the horse trial (Table 6.1.2). The first predictor, perceived readiness, accounted for 28% of the variance in the total performance score. The second predictor, external environment, accounted for 48% of the variance in the total performance score.

**Table 6.1.2:** Stepwise multiple regression summary; significant predictors of total performance score.

	PEQ factor	R	R <sup>2</sup>	F-to-enter	Beta coefficient
Total performance					
Step 1	Perceived readiness	0.529	0.280	5.43 <sup>a</sup>	-0.829
Step 2	External environment	0.696	0.484	6.09 <sup>a</sup>	0.543

<sup>a</sup> = p<0.05

Perceived readiness was negatively correlated to the total performance scores, hence increased perceived readiness resulted in a decreased performance score. Due to the fact that the performance is measured by penalty scores, this resulted in a better performance. External environment was positively related to total performance, consequently, increases in the rider's perceptions of a the suitability of the course and weather and importance of the event produced increases in the performance score and therefore a poorer performance.

#### *6.1.4 Discussion*

The horse trials riders reported higher cognitive anxiety and lower self-confidence in comparison to middle distance runners (Jones et al., 1990). These results suggested that the riders experienced the horse trial as more threatening than other athletes for this present study.

The mean scores for each item on the PEQ differed from those obtained by Jones et al. (1990). Specifically, the riders perceived their training and coach's influence more positively than the middle distance runners. Also, the riders perceived the position and performance goals as easier to achieve than the runners. It was possible that the riders were able to achieve the goals more easily or the goals set by the riders were less challenging and difficult in comparison to the middle distance runners (Jones et al.,

1990). Future research incorporating this questionnaire would need to obtain details of the goals set and the perception of goal difficulty.

#### *Relationships between PEQ, CSAI-2 components and performance measures*

The CSAI-2 intercorrelations partially supported those obtained by Martens et al. (1990). The lack of correlation between cognitive anxiety and self-confidence was possibly due to the relatively small sample size. The direction of this relationship was similar to Martens et al. (1990) with cognitive anxiety increasing as self-confidence decreased.

The correlations between the PEQ factors and the CSAI-2 components showed that as perceived readiness increase, self-confidence also increased for the horse trials riders. The perceived readiness factor consisted of the riders perception of training and previous competition performance, physical and mental readiness for the upcoming competition, the level of fatigue and the rider's perception of how he/she was riding. Consequently, riders' who had prepared for the competition and were positive about their training were more confident about their performance in the competition. Bandura (1977) identified performance accomplishments as one factor affecting an athlete's self-efficacy for a task. The factor perceived readiness incorporates performance accomplishments and can therefore account for the increased self-confidence. The increase in perceived readiness also accounted for increased performance in the show-jumping phase and increased perception of success in this phase. These results can be linked to the rider's training and positive attitude encompassed in the perceived readiness factor prior to the competition.

The results indicated that as riders perception of the difficulty of achieving the position goal increased, their performance in the dressage phase decreased. It suggested that riders who set their position goal too high experienced a decrease in performance. Goals that are too difficult lead to decreased motivation, increased anxiety and less success (Locke & Latham, 1985).

The results indicated that the PEQ factors did not differ between skill level groups. These results suggested that the riders of all levels reported similar levels of antecedents on the PEQ. It is suggested that the difference between riders of differing skill level may be their perception of the extent to which these antecedents affected anxiety and performance and also the riders perceived coping potential in relation to these antecedents. Future research is encouraged in this area.

The perception of cognitive anxiety as facilitative or debilitating discriminated between the riders' perception of the coach's influence. Specifically, riders' who reported the cognitive anxiety as debilitating to performance perceived their coach's influence less positively than the riders who perceived cognitive anxiety as facilitative to performance. It is suggested that the rider develops a positive perception of anxiety due to the help received from the coach prior to the competition. Future analysis of antecedents would require the rider-coach relationship to be analysed in more detail to provide more detailed evidence of this result.

The results indicated that the riders who obtained a poor performance in the whole horse trial perceived themselves as less ready and less prepared than the riders who achieved a good performance. Perceived readiness encompassed factors relating to preparation, training, physical and mental readiness. This result highlights perceived readiness, as measured by the PEQ, as a key antecedent in determining performance within the context of horse trials. This antecedent must be taken into consideration in the development of individualised stress management intervention programmes.

### *Regression analyses*

The results indicated that total performance score was predicted by perceived readiness and external environment. The inclusion of perceived readiness as a predictor of performance supported the correlations between perceived readiness, self-confidence and perceived success previously. It again highlights the importance of training and physical and mental preparation for performance but also the positive effect it has on the athletes self-confidence for the competition. Perceived readiness debilitates the negative effect of anxiety on performance. The inclusion of external environment was

somewhat ambiguous. External environment was a significant predictor of total performance score, yet was positively correlated to the performance score, suggesting that as the rider perceived the course and weather suitable for them, their performance decreased. External environment also encompassed the riders perception of the importance of the competition. Increased importance of the competition could have led to the rider experiencing greater pressure which negatively affected their performance. For this to account for the positive correlation between external environment and total performance score, it would have been necessary for the importance of the competition to outweigh the contribution of the course and weather suitability. Further analysis of the external environment factor needs to assess the relative weighting of each item in that factor.

The lack of predictors for the CSAI-2 components did not support the results obtained by Jones et al. (1990). They found perceived readiness was a significant predictor of both cognitive anxiety and self-confidence. An explanation for the lack of relationships between the PEQ factors and the CSAI-2 components could be the type of sport analysed. Jones et al. (1990) investigated the antecedents of middle distance runners. The present study modified the PRQ to improve the face validity of the questions for horse trials riders. The modification did not, however, include specific antecedents for riders competing in horse trials. Preliminary analysis of interview data conducted with horse trials riders has revealed several antecedents of competitive state which were additional to the antecedents identified by Jones et al. (1990) in their PRQ.

A major antecedent which was reported by horse trials riders related to questions regarding the riders attitude towards previous performance (Jones et al., 1990) but incorporated the riders' attitude towards the horses' previous performance as well. Thus, the interaction between the horse and rider and the rider's perception of this interaction is important in determining psychological state and performance (see Section 3.3.2 and 5.1).

*“(attitude towards previous performance) It depends how the horse has gone...if he's going very well then I'm pretty confident, but if he's been stopping and he's not going very well...then I'm very negative about the event”.*  
Novice horse trials rider

“(attitude towards previous performance)...the horse’s performance and my performance”

Advanced horse trials rider

Consequently, the analysis of antecedents in horse trials should analyse the aspects of the horse’s performances, the horse’s training and fitness and whether the course conditions are suitable for the horse’s performance. In terms of the external environment factor, horse trials riders identified several additional factors to those previously identified for middle distance runners (Jones et al., 1990). Other factors considered were; the spectators, other competitors, site layout, press and the media, horse owners and sponsors.

“(show-jumping) ...I just kept thinking “What will people think, I can’t even get him round the corner on the correct lead””.

Novice horse trials rider.

“(other competitors) ...you’ve got a lot of far better riders than yourself...and you just feel stupid...it does have a big effect, if you are working in...”

Novice horse trials rider.

“(site layout)...if you’re preparing for the dressage and the horses can hear the cross-country horses galloping...that is a big distraction for them...especially with a young horse”

Intermediate horse trials rider.

“(press and media)...if you have a press report about something...or there’s a picture of you doing something and its criticising instead of promoting then...public opinion sways against you”

Advanced horse trials rider.

“(sponsors)...They never push me or say we’ve got to be placed...but I know how much they enjoy it...if we do have a bad day I feel a little bit bad about it because...I feel the sponsors won’t have enjoyed it so much”

Intermediate horse trials rider.

The subjectivity of the dressage phase of the horse trial was reported as a predictor of psychological state and performance prior to the show-jumping phase. This finding supported Martens et al. (1990) who identified increases in cognitive anxiety and decreases in self-confidence for athletes in subjectively marked sports.

A further area not included in the PEQ or PRQ (Jones et al., 1990) was the aspect of preparation and planning throughout the day of the competition. Horse trials riders reported that a predictor of their level of anxiety was related to whether their plan or schedule for the competition had been disrupted. This aspect may be more pertinent to horse trials which involves three phases for the horse trial. Consequently, the riders must prepare and compete at three set times, thus requiring more planning. Sport specific measurements of the antecedents of competitive state and performance are required to produce a more sensitive assessment. Future research of the antecedents reported by horse trials riders is suggested with the inclusion of questionnaire items for the antecedents identified above. Development of a specific horse trials antecedent questionnaire may serve to predict levels of anxiety and performance outcomes in the future.

#### *6.1.5 Conclusion*

The study revealed the importance of perceived readiness in developing self-confidence, improving performance and contributing to increased perceived success in the horse trial. Results did not support the identification of certain predictors of cognitive and somatic anxiety and self-confidence. It was suggested that the range of antecedents encompassed in the PEQ was not sufficient in the context of horse trials. A more sensitive sport specific measure incorporating antecedents such as the horse's performance, spectators, site layout, subjectivity of scoring, sponsors and the press should be developed.

6.2 The measurement of causal attributions by horse trials riders using the causal dimension scale II (CDSII).

### *6.2.1 Introduction*

Causal attributions are the explanations that individuals provide for a particular outcome. The type of causal attributions made by the individual give the researcher an important insight into that individual's actions, feelings, confidence and motivation as they are concerned with the individual's perception and interpretation of the causes of outcomes (Cox, 1990). The attributions regarding a situation depend on the individual's perception of that situation and may be biased towards internal or external factors. They may not be completely realistic, but, they reveal information about the individual's self-perceptions and perceptions regarding other people.

Within the context of sport, causal attributions can explain the reasons why an athlete thought he/she was successful or unsuccessful. For example, in horse trials, there are many causal factors to which a rider could attribute a successful performance; 'I rode a really good cross-country round', 'I was trying hard in the dressage test', 'I was lucky the planks didn't fall down in the show-jumping'. Examples of causal attributions regarding an unsuccessful outcome include; 'The dressage judge didn't like my horse', 'The cross-country course was too difficult for us', 'The competition was much better than me'.

Weiner (1972, 1979) categorised such attributional statements in certain causal dimensions: locus of causality, stability and controllability (see Section 3.2). These causal dimensions reflect psychologically meaningful properties or characteristics of causal attributions (Weiner, 1979). This classification enables researchers to investigate the attribution process and to understand the relationships between causal attributions, affective reactions and skill level.

Attributions may be incorporated in the theoretical model of the state anxiety reaction during and after sports competitions. High levels of cognitive anxiety and low levels of self-confidence can disrupt performance and possibly influence the attributions

made regarding a performance. Also, the individual's attribution is associated with a perceived success or perceived failure situation can have an effect on the level of anxiety experienced. Specifically, if an athlete makes an internal, stable attribution to his/her ability in connection with a perceived failure, an increased state anxiety level may be experienced. This has implications for the athlete's motivation, anxiety and competitiveness for subsequent performance or for future performances (Duncan & McAuley, 1987). This study aims to test the suggested links between state anxiety, attributions, causal dimensions and performance.

The sport of horse trials provides an ideal opportunity to study the causal attributions made by riders. Due to the multifaceted nature of the sport, a wide range of attributional statements can be identified by riders for the outcome of their performance. Some examples include poor ground conditions, a broken stirrup leather, good riding, strong wind. Other examples which are more open to individual interpretation include; nervousness of the horse, inaccurate approaches to fences, biased dressage judging, spectators on the cross-country course, good opponents, and a lack of preparation.

The assessment of the causal dimensions identified by riders at a horse trial can improve our understanding of the riders' perceptions. Specifically, to what causes do they attribute success and failure? Is there a difference in the causal dimensions reported between Novice, Intermediate and Advanced riders? Do high levels of state anxiety prior to a competition affect the causal attributions post-competition? To address these research questions, this study attempted to assess the causal dimensions reported by Novice, Intermediate and Advanced horse trials riders on the CDSII (McAuley et al., 1992) in a competition setting. Additionally, the study aimed to investigate the relationship between causal dimensions and the components of competitive state anxiety measured by the CSAI-2.

### *6.2.2 Method*

#### *Subjects*

A total of 30 subjects (29 female, 1 male) formed the sample in this study. Subjects were aged between 17 and 45 years old ( $\bar{x} = 28.10$ ,  $sd = \pm 8.69$ ). Thirty three questionnaire booklets were returned for this study, however three questionnaires were incomplete and were not included in the analysis. The study incorporated riders who competed in Novice ( $n=14$ ), Intermediate ( $n=11$ ) and Advanced ( $n=5$ ) British Horse Society (BHS) horse trials. The subjects formed an opportunity sample from various BHS horse trials in Great Britain during the 1995 Summer and Autumn season.

Riders were classified into Novice, Intermediate and Advanced groups based on the highest level at which they compete. Hence, a rider who has competed at a Novice level was tested whilst riding in a Novice horse trial. Similarly, riders who competed at Intermediate and Advanced levels were tested at Intermediate and Advanced horse trials. This was to ensure each rider was experiencing levels of competitive stress generated by their highest standard of competition. All competitors were tested at BHS horse trials which were subject to the BHS Horse Trials Group competition regulations. Thus, the same standard of the dressage test, show-jumping and cross-country course length and fence dimensions occurred in each Novice, Intermediate and Advanced horse trial respectively (see Section 2.8 for horse trial regulations).

#### *Measures*

*The Competitive State Anxiety Inventory - 2 (CSAI-2)*: The CSAI-2 (Martens et al., 1990) was used to assess the subjects level of anxiety prior to the competition. Scores for cognitive and somatic anxiety and self-confidence were obtained from the questionnaire (see Section 5.3 for a detailed explanation of this questionnaire).

*The Competition Evaluation Form 1*: This measure consisted of four questions regarding the subjects' subjective appraisal of success or failure in the competition and was based on the Test Rating Form ( Forsyth & McMillan, 1981; Vallerand &

Richer, 1988). First, the subjects were required to record their final score on the form. Second, subjects were required to record their final position achieved in the competition. These questions focused the subject's attention on performance prior to suggesting reasons for the outcome (Vallerand & Richer, 1988). Third, the subjects responded to the question regarding their appraisal of their performance in the competition; *"How good do you think your performance was in this competition?"* on a 9 point scale ranging from 1 (*very bad*) to 9 (*very good*). Fourth, subjects responded to a second subjective appraisal question; *"How well do you think you did in this competition?"* again on a 9 point scale ranging from 1 (*very poor*) to 9 (*very well*). Two questions assessing the subjects subjective appraisal of the competition were asked to increase the reliability of the success or failure measure.

*The Competition Evaluation Form 2:* This form comprised the Causal Dimension Scale II (CDSII; McAuley et al., 1992). The Causal Dimension Scale II was used to measure the causal dimensions identified by each rider. The CDSII is a state measure of causal dimensions and can be used to assess attributions in specific competition settings. It was developed to reduce the occurrence of fundamental attribution researcher error associated with attributional research. Hence, subjects themselves identify the causal dimensions associated with an attributional statement they have given (see Appendix VI).

Russell (1982) initially designed the Causal Dimension Scale (CDS) based on Weiner's (1979) causal dimensions; locus of causality, stability and controllability. The validation of the questionnaire incorporated the refinement and separation of the controllable dimension into personal control and external control to increase its reliability. The final version of the CDSII comprised of dimensions; locus of causality, stability, personal control and external control. These dimensions were tested and shown to have good internal consistencies; locus of causality, 0.67; stability, 0.67; personal control, 0.79; external control, 0.82. The CDSII is suggested to be a reliable and valid measure of causal dimensions (McAuley et al., 1992).

### *Procedure*

Subjects were approached prior to a competition and asked if they were willing to partake in the study. They were given instructions to complete the questionnaires identified in the measures section of this study, which formed the 'Competition Assessment Booklet'.

The CSAI-2 was to be completed 30 minutes prior to their start in the competition. The CSAI-2 was administered with the instructions as suggested by Martens et al. (1990) to reduce the effect of social desirability of subjects responses (see appendix VII). The procedural instructions given to subjects prior to the completion of the CSAI-2 were; "Please complete the questionnaire 1/2 hour before the dressage phase. *(Please complete as close to 1/2 an hour before as is practical for you)*". Due to the nature of the sport, riders are often preoccupied with pre-competition preparation (tacking up, warm up and so on). It was envisaged that riders would be reluctant to disrupt their routine and were hence asked to complete the CSAI-2 as close to 30 minutes before the start of their competition.

Following the competition, subjects completed the Competition Evaluation Forms 1 and 2, one hour after the final scores of the competition had been displayed. This time point was chosen for two reasons. Firstly, the subjects' causal attributions and causal dimensions would be more rational at this stage after the competition. Secondly, subjects would have completed the post-competition care of the horse including cooling down the horse after the cross-country and treatment of any injuries sustained. Hence, riders would be more willing to complete the questionnaires due to the relatively small disruption to their normal competition routine.

### *Data Analysis*

The data were explored prior to each analysis for normality (Shapiro-Wilks test) and for variance (Levene test). If these tests were upheld then parametric statistical tests were tests employed, such as one way analysis of variance. If these tests were not upheld then non-parametric tests were employed such as, Mann-Whitney U test and

Kruskal-Wallis one way analysis of variance. The data analysis incorporated examination of relationships between CDSII, CSAI-2 and performance measures and skill level.

### *6.2.3 Results*

The results were compared to previous research for the CDSII and the CSAI-2 (McAuley, 1991; Martens et al., 1990).

#### *CDSII and CSAI-2 components*

The means and standard deviations for the CDSII components are presented in Table 6.2.1. The table also presents the available means and standard deviation scores for middle-aged sedentary adults at week 10 of a continuing exercise programme, for comparison to the present study (McAuley, 1991). A high score for locus of causality and personal control represents the subjects' perception of the primary reason for their performance was related to factors that were internal and under their own personal control. A high score for the component, stability, represents the subjects' perception that the reason for their performance was related to stable and unchangeable factors. A high score for the component, external control, refers to the subjects' perception that the reasons for their performance were related to factors under the control of other people or events.

The results in Table 6.2.1 illustrated the perception of horse trials riders, that their performance was related to internal factors which were under their control. The level of personal control was comparable to the values obtained by McAuley (1991). However, the horse trials riders perceived the result to be less internal than the sedentary adults undertaking an exercise programme for the locus of causality component. The results for external control were comparable to McAuley (1991), whereas, for the stability component, horse trials riders perceived the cause of their result to be much less stable than the middle-aged exercisers.

**Table 6.2.1:** Means and standard deviations for the CDSII components for all subjects in the present study and those obtained in McAuley (1991).

CDSII Component	Present Study		McAuley (1991)	
	Mean	± sd	Mean	± sd
Locus of Causality	15.36	5.51	20.98	4.20
Stability	10.43	4.68	17.23	4.85
External Control	10.7	5.52	10.06	5.42
Personal Control	19.07	5.81	20.95	5.68

Spearman rank correlations between the CDSII components revealed the strong positive correlation between personal control and locus of causality ( $r=0.63$ ,  $P<0.001$ ) and was comparable to McAuley (1991). No other significant correlations were found between the CDSII components, however, the direction of the correlations were comparable to McAuley (1991).

The means and standard deviations of the CSAI-2 components were compared to those obtained by Martens et al. (1990) for a sample of female college athletes (Table 6.2.2). The results showed significantly lower level of self-confidence exhibited by the horse trials riders in comparison to the female college athletes ( $t=-3.03$ ,  $P<0.05$ ).

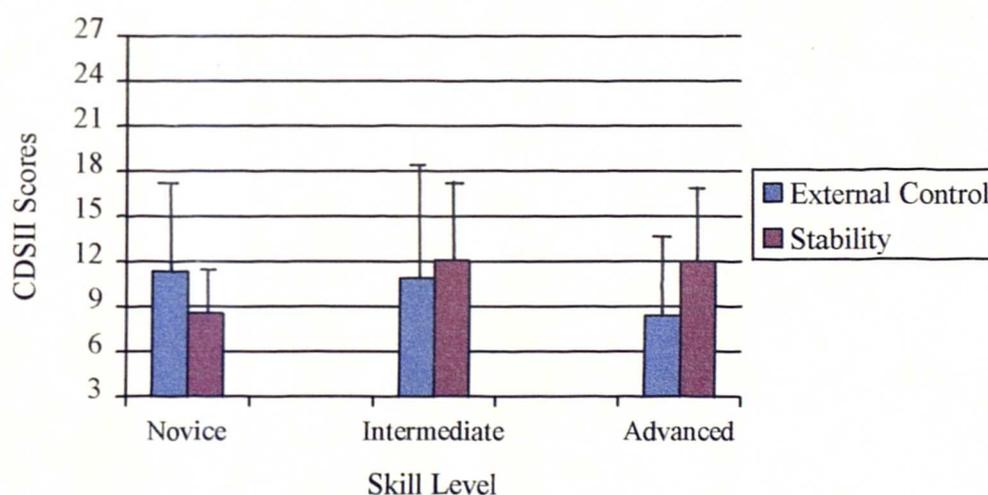
**Table 6.2.2:** Means and standard deviations for all riders for the CSAI-2 components and from Martens et al. (1990).

CSAI-2 component	Present study		Martens et al. (1990)	
	Mean	± sd	Mean	± sd
Cognitive anxiety	18.43	4.83	18.4	5.99
Somatic anxiety	15.77	4.26	16.85	4.94
Self-confidence	21.4	5.49	24.67	5.90

Correlations between the CSAI-2 components revealed strong significant correlations between cognitive anxiety and somatic anxiety ( $r=0.39$ ,  $P<0.05$ ) and between somatic anxiety and self-confidence ( $r= -0.55$ ,  $P<0.001$ ). These correlations were comparable to those obtained by Martens et al. (1990) and other researchers. Cognitive anxiety and self-confidence were not significantly related to each other, however, the negative trend of the correlation was similar to Martens et al. (1990).

There were significant negative correlations between cognitive and somatic anxiety intensity and their corresponding direction scales (cognitive anxiety intensity and direction,  $r=-0.45$ ,  $P<0.05$ ; somatic anxiety intensity and direction,  $r=-0.57$ ,  $P<0.002$ ). The result for somatic anxiety intensity and direction was comparable to Jones et al. (1993). In contrast to Jones et al. (1993), significant relationships between self-confidence intensity and cognitive anxiety direction or somatic anxiety direction were not found in the present study. No significant correlations were found between CDSII components and CSAI-2 components for the whole sample. The results suggested there were no relationships between the pre-competitive state anxiety and the causal attributions.

An aim of the study was to investigate the differences in causal attributions between the different skill levels of riders. A Kruskal-Wallis one way analysis of variance assessed the differences between Novice, Intermediate and Advanced riders for the CDSII components. No significant differences were revealed between skill level for locus of causality, personal control, external control or stability. However, the CDSII component, external control exhibited an increased trend towards higher levels of external control and less stability for the Novice riders (Figure 6.2.1). Standard deviations for the CDSII components for Novice, Intermediate and Advanced groups were large and ranged from 3.32 to 7.09.



**Figure 6.2.1:** The means and standard deviations for CDSII external control and stability scores for Novice, Intermediate and Advanced horse trials riders.

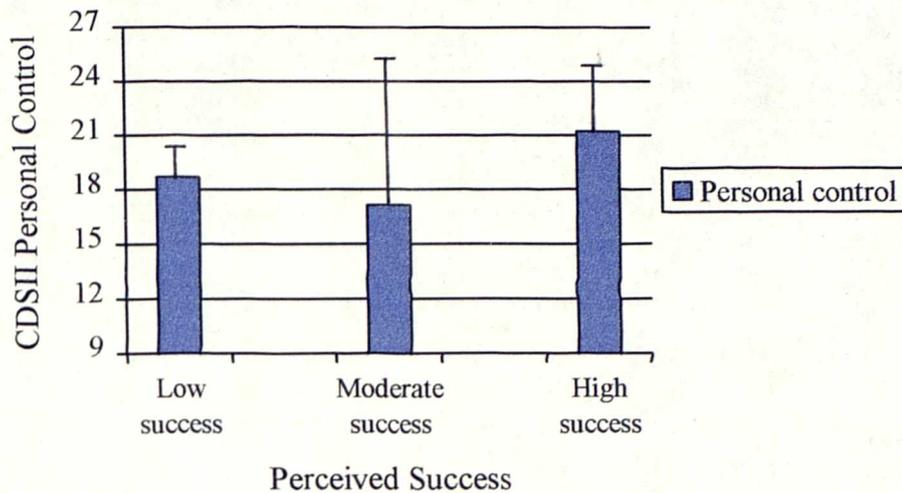
The CSAI-2 results were analysed between the different skill level groups. Kruskal-Wallis analysis of variances did not reveal differences between CSAI-2 intensity and direction components between Novice, *Intermediate and Advanced riders*. Standard deviation scores for the Novice, Intermediate and Advanced groups were large and ranged from 2.51 to 7.27.

#### *CDSII, CSAI-2 and performance measures*

The performance measures included; the penalty score, placing, self-rating of performance and self-rating of success. Correlational analysis of the CDSII components and performance revealed no significant relationships. There was evidence to suggest that as perceived success increased, the subjects' perception of personal control also increased, however this result did not reach significance ( $r=0.35$ ,  $P=0.055$ ).

Based on this suggestion, the researcher analysed the differences in personal control between different levels of perceived success. The perceived success self-rating scale ranged from 1 (*very poor*) to 9 (*very well*). Subjects were divided into the three groups based on their self-rating score for perceived success; the low success group with a self-rating of 1-3 ( $\bar{x}=2.0$ ,  $sd = \pm 1.0$ ), the moderate success group with a self-rating of 4-6 ( $\bar{x}=5.21$ ,  $sd = \pm 0.8$ ), and the high success group with a self-rating of 7-9 ( $\bar{x}=7.69$ ,  $sd = \pm 0.85$ ). A parametric one-way analysis of variance revealed significant differences in the self-rating score for each group ( $F_{(2,27)}=66.23$ ,  $P<0.0001$ ). Post hoc tests revealed that all groups were significantly different in terms of perceived success.

A subsequent Kruskal-Wallis analysis of variance revealed no significant differences in personal control between each perceived success group (Figure 6.2.2). The trend for this result showed the increased personal control between the low and high success groups.



**Figure 6.2.2:** The means and standard deviation scores for CDSII personal control for the low, moderate and high perceived success groups.

The total performance success self-rating score was obtained from the addition of the scores from both self-rating scales on the “Competition evaluation form 1”. Subjects were asked to rate their performance for the competition and their perceived success for the competition. The addition of these two scales to provide a measure of perceived success was used by other researchers (Vallerand & Richer, 1988) to provide a more reliable measure of performance.

The total performance success scores was examined in relation to the CDSII components. Subjects were divided into three groups based on their total performance success score. Group 1, the low total performance success group, was comprised of subjects who scored between 2 and 8 on the total performance success scale ( $n=5$ ,  $\bar{x}=6.2$ ,  $sd = \pm 2.68$ ). Group 2, the moderate total performance success group, was comprised of subjects who scored between 9 and 13 on the total performance success scale ( $n=14$ ,  $\bar{x}=11.07$ ,  $sd = \pm 1.27$ ). Group 3, the high total performance success group, comprised subjects who scored between 14 and 18 on the total performance success scale ( $n=11$ ,  $\bar{x}=15.36$ ,  $sd = \pm 1.36$ ). To ensure the groups were different in terms of total performance success scores, a parametric one-way analysis of variance with post hoc multiple comparisons revealed a significant difference between all three

total success group ( $F_{(2,27)}=60.09$ ,  $P<0.0001$ ). No differences were then found between the total performance success groups for each of the CDSII components.

The CSAI-2 components were analysed with respect to the performance measures. The subjects were grouped into a high performance group ( $n=18$ ,  $\bar{x}=47.56$ ,  $sd = \pm 12.8$ ) and a low performance group ( $n=12$ ,  $\bar{x}=97.3$ ,  $sd = \pm 38.9$ ) from their total penalty score for the competition. The lower the penalty score the better the performance. The high performance group had a lower penalty score than the low performance group. These groups were found to be significantly different ( $U=-4.57$ ,  $P<0.0001$ ). A significant difference was found between the low performance group ( $\bar{x}=19.08$ ,  $sd = \pm 5.07$ ) and a high performance group ( $\bar{x}=22.94$ ,  $sd = \pm 5.33$ ) for the self-confidence component of the CSAI-2 ( $U = 3.875$ ,  $P<0.05$ ). Riders who obtained a lower penalty score and consequently performed better, reported a higher self-confidence score prior to the competition than the low performance group.

Visual inspection of the primary reasons for the competition outcome for each subject showed that, as would be expected, a range of reasons were reported. Specifically, subjects reported factors such as the horse (7 subjects), themselves (7), their partnership between themselves and the horse (8), others (1), environmental (4) and own tactics (3) as primary causes for their result.

#### *6.2.4 Discussion*

##### *CDSII and CSAI-2 components*

The comparison of CDSII components in the present study to those obtained by McAuley (1991) revealed the lower perception of an internal locus of causality and stability for the horse trials riders. It was possible that the riders perceived their performance was not completely related to internal factors as other factors including the horse and other competitors affected their performance. This again highlights the close interaction between the rider and horse. It emphasises the need to examine the psychological factors associated with the rider whilst paying close attention to the riders' perceptions of the contribution of the horse (see Section 5.1).

The rider's perception that the cause of his/her performance was less stable and changeable over time was possibility accounted for by the situation. Horse trials riders were tested at a one-day competition. The results could therefore represent a very short term, situation specific interpretation of the stability component.

The significant correlation between locus of causality and personal control questioned the discriminant validity of the scales. This was investigated by McAuley et al. (1992), who obtained strong correlations between the CDSII components. Confirmatory factor analyses empirically supported the distinction between the constructs. The non significant correlations but similar trends to the results obtained by McAuley (1991) provided support for the distinction between constructs on the CDSII.

The correlations between CSAI-2 intensity and direction dimensions were comparable to other studies in the literature (Martens et al., 1990; Jones et al., 1993). These results suggested that horse trials riders in the present study were experiencing similar competitive state anxiety reactions to other athletes.

The lack of relationships between pre-competitive state anxiety as measured by the CSAI-2 and the causal attributions from the CDSII could be explained by the relatively small sample size. It is also possible that causal attributions are related to post-competition anxiety more than pre-competition anxiety. It was thought that, in this research, high levels of state anxiety would affect the causal attributions made post-competition. This was not supported by the present study. It was possible that due to the long time lag between the measurement of anxiety and the measurement of the causal attributions other factors may have affected the causal attributions made. Sanderson and Gilchrist (1981) measured pre and post-competitive anxiety and causal attributions in squash players. They found relationships between post-competition anxiety and causal attributions, however, they did not report relationships for pre-competitive anxiety and causal attributions. Biddle and Jamieson (1988) examined the relationships between competitive trait anxiety and causal attributions. Again, they

revealed no effect of competitive trait anxiety on the causal attributions identified by table tennis players. Future research would need to measure pre- and post competitive state anxiety to investigate possible relationships with causal dimensions for horse trials riders.

No significant differences were found between the Novice, Intermediate and Advanced horse trials riders for the CDSII components. Initial trends were, however, found for external control and stability (Figure 6.2.1). Specifically, the results suggested that Novice riders believed their performance to be controlled by outside factors such as other people and the horse, more than Intermediate and Advanced riders. It was possible that Novice riders were more focused on other competitors and believed that they had a strong influence on their performance. It may also suggest the Novice riders perceived the result to be influenced by the horse's contribution rather than their performance and their control of the horse. Novice riders also perceived the cause of their result as less stable. Such attributions reduce the possibility of decreased motivation for competition. The Novice riders consequently did not perceive the cause to be permanent. In a failure situation, this would be beneficial to the rider for future attempts at competition.

Intensity and direction components of CSAI-2 were not different between Novice, Intermediate and Advanced riders. The lack of differences between CDSII and CSAI-2 components and skill level suggested that the riders of all levels experienced similar state anxiety reactions and causal attributions. This is a relatively new research area in terms of causal attributions measured by the CDSII and no other studies have been found for comparison. However, in many studies, differences in anxiety have been found between novice and elite athletes (Fenz & Epstein, 1967). The large standard deviations and variability in the skill level groups could have accounted for the lack of differences in pre-competition anxiety and causal attributions in this study. The categorisation of riders into skill levels groups is a discrete classification. Future research may require a more sensitive measure of skill level to discriminate between

the experience level within a group and consequently move away from the Novice, Intermediate and Advanced classification scheme.

#### *CDSII, CSAI-2 and performance measures*

The results provided some support for a relationship between perceived success and personal control. The comparison between different levels of perceived success revealed a trend in the level of personal control. The low perceived success group reported lower levels of personal control in comparison to the high perceived success group. As riders perceived more personal control over the situation, their horse and their performance, their levels of perceived success were higher. This suggestion potentially relates to the level of self-efficacy experienced by a rider, where an aspect of self-efficacy is the perception of control over a performance.

Previously, Duncan and McAuley (1987) did not find relationships between high and low efficacy groups and causal explanations for outcome. Duncan and McAuley (1987) utilised the Causal Dimension Scale which did not distinguish between personal and external control on the controllable dimension of the questionnaire. The finding in this present study suggested a possible link between aspects of self-efficacy and personal control on the CDSII. This result highlights an important area for future research. Further studies need to establish whether a link between personal control and self-efficacy exists and whether the different levels of self-efficacy are related to different causal attributions (Courneya and McAuley, 1993).

The utilisation of the total perceived success measure, that is, the combination of self-rated performance and self-rated success (Vallerand and Richer, 1988) enabled subjects to be grouped into low, moderate and high total perceived success groups. The results did not show any relationships between these groups and the CDSII components. These results did not support the previous suggestion of a link between perceived success and personal control using one measure of perceived success. It was possible that in some cases the subjects' perceptions of their performance and their success in the competition, contradict each other. A rider may perceive his/her

performance as very poor, however, their success in the competition as very high. Thus, the combination of the two scales then masked any potential differences.

The success may also be attributable to other factors such as the horse's performance. Hence, again the analysis of findings must take into consideration the rider's perceptions of the horse's contribution and the horse's performance. Future research in this area may need to distinguish between these factors when considering perceived success and perceived quality of performance.

The higher self-confidence level reported by the high performance group again emphasised the importance of the rider's feelings of confidence in their ability and control over the situation prior to competition (Vealey, 1986). Future research needs to assess self-confidence as the key element in the predictor of performance and perceived success. With regard to the difference between the phases, future research needs to assess the causal attributions for each phase of the horse trial. Leith and Prapevessis (1989) did not find support for the hypothesis that causal attributions would differ between subjective and non-subjective situations for elite athletes. They suggested that elite athletes were more consistent in their attributions. It is suggested that this area is investigated with less experienced athletes.

The visual inspection of the primary reasons for the results reported by riders, revealed a large number focused on themselves, the horse or their partnership with the horse as reasons for their outcome.

“My horse and I are still working at doing all 3 phases to the best of our ability. We have not yet reached a full partnership”

Advanced Horse Trials Rider.

It was not clear the extent to which riders' regarded the horse as an external factor, particularly when it is known that riders' do place a great deal of emphasis on the partnership between themselves and the horse and the necessity to compete as one unit. It would be interesting to further investigate the riders' perceptions of the horse in terms of attributional categories. A qualitative analysis could be used in future

research to provide a greater understanding of the attributions made by horse trials riders.

#### *6.2.5 Conclusion*

The present study did not provide evidence of a link between pre-competitive state anxiety and causal attributions for horse trials riders. Future research in this area needs to assess pre-, during and post competition state anxiety to examine relationships with causal attributions. The distinction of skill level provided initial evidence to suggest a link between Novice riders in comparison to Advanced riders for external control and stability. A problem was identified with the variability within each skill level group. Development of the categorisation into skill levels groups with greater homogeneity may produce more significant findings in this area in future research.

The results suggested that links between personal control, perceived success and self-confidence and penalty score exist for horse trials riders. The investigation of self-confidence and self-efficacy as key elements in the outcome and causal explanations of outcomes is required in more detail. Qualitative analysis of the attributions made by horse trials rider would provide researchers with a greater insight into the factors associated with explanations of outcomes and whether riders consider them to be external. This would provide evidence regarding the interaction between the horse and rider and the riders' subsequent perceptions of this interaction which greatly affect their psychological state for competition.

### 6.3 Summary

The studies in this chapter explored the antecedents and causal attributions relating to multidimensional competitive state anxiety within horse trials. The investigation into the antecedents of anxiety revealed the importance of the rider's perceived readiness for a competition. Perceived readiness was found to boost confidence levels, increase performance and perceived success. Extending this, the increased levels of perceived success and self-confidence were found to increase the rider's perception of personal

control over their performance as measured by the causal attributions. The positive effects of perceived readiness to the rider's overall psychological state and performance throughout competition highlight the need for perceived readiness to be taken into consideration in the development of individualised stress management intervention programmes. The SMIP aims to *reduce and cope with pre-competitive anxiety*. The increase of perceived readiness through an SMIP can counteract the negative anxiety effects by generating a positive perception and boosting self-confidence.

Other antecedents of anxiety were identified by horse trials riders. The PEQ did not include aspects of the horse and rider interaction, spectators, media, other competitors, subjectivity of phases and site layout. These antecedents highlight the wide range of causes of anxiety which must be considered prior to the SMIP. Anxiety reduction and increased perceived readiness will help the rider combat the negative effect of these antecedents.

## CHAPTER 7

Investigation 3: Stress management intervention study - design, application and assessment of stress management techniques on the psychological state and performance of horse trials riders

### **7.0 Investigation 3: Stress management intervention study - design, application and assessment of stress management techniques on the psychological state and performance of horse trials riders.**

The case studies in this investigation apply multidimensional anxiety theory and stress management intervention techniques into an practical applied sport psychology setting. The analysis of three collective case studies enables a holistic approach to be undertaken. Martens et al. (1990) suggested that the research into multidimensional anxiety should focus on within-subject relationships. Mahoney and Avenier (1977) identified differences in the anxiety and coping patterns of elite gymnasts. Also in group analysis, the within group variability can mask individual changes and fluctuations in anxiety throughout the competition. Consequently, the analysis of anxiety patterns for three riders enables detailed information regarding those subjects to be obtained. Gill (1994, p.25) stated that

“stress is an individual process, coping with stress is an individual process; and sport and exercise psychologists should focus on individual characteristics and preferences rather than applying universal strategies to all”

The stress management intervention programmes incorporate several techniques to form a multi-modal approach. These techniques are applied to each case study to enable each subject to cope with anxiety in specific areas where they experience the detrimental effects of anxiety.

The reduction and control of anxiety was targeted due to the evidence of its prevalence gained in Investigation 1, and because it was envisaged that the control of anxiety would have the largest effect on performance. Investigation 3 utilises the information obtained in Investigations 1 and 2. Thus, the development of the individualised stress management intervention programmes (SMIP) takes into account the rider and horse interaction, the temporal patterning of anxiety, the impact of the rider's interpretation of anxiety as facilitative or debilitating to performance and the individual's perceived causes of anxiety.

Stress management intervention techniques have been utilised in clinical situations, life situations and also applied sport settings (Crocker, 1989; Maynard & Cotton, 1993; Bakker & Kayser, 1994) to reduce the anxiety response experienced by individuals and to develop mental skills for improved performance. For a detailed literature review of the research in stress management and sports performance see Sections 4.2 and 4.3. Inter-case study comparisons of the three collective case studies allowed the effectiveness of the SMIP to be assessed using several subjects without the need for matched control subjects and could thus focus on individual changes in anxiety and performance.

The following study implemented an SMIP for three horse trials riders over a 2 month period. The effectiveness of this intervention programme was evaluated and recommendations for horse trials riders experiencing competition anxiety were made.

Aims:

The primary aim of the study was

- 1) To move the level of competitive state anxiety experienced by each subject during the pre-competition, competition and post-competition period to an optimal level (*the optimal level is defined as the anxiety level which rider's perceive to be most beneficial to their performance, thus incorporating their perceived intensity and perceived direction of the state anxiety experienced*).

Subsidiary aims of the study were

- 2) To develop the subject's awareness of his/her mental attitude, thoughts and feelings (meta-cognitive skills) and to provide the subject with a practical knowledge of goal-setting, cognitive restructuring, positive self-talk and relaxation techniques, which could be utilised in equestrian sports as required.
- 3) To help the subject develop a positive attitude towards competition performance and post competition evaluation.

## 7.1 The stress management intervention programme (SMIP).

The information provided in this section forms the general design and methodology for the stress management intervention study for all three subjects. Each case study follows this methodology with a standard baseline assessment, procedure for data collection and implementation of the SMIP devised by the researcher. The SMIP differs slightly between each subject, not in the basic content of stress management skills, but in the specific area of the horse trial to which these skills are targeted. This is to ensure each subject receives the most appropriate SMIP but still allows for comparison between subjects.

### 7.1.1 Design

#### *Individuality*

The effectiveness of SMIP's is dependent on the specificity of that programme to an individual athlete in their sport. Each athlete experiences different levels of anxiety which are predominantly the result of their perception of a situation as threatening (Spielberger, 1989). Therefore, it is essential that a SMIP is specifically tailored to the athletes needs and requirements for their sport.

In order to study the effectiveness of certain stress management intervention techniques in an applied situation, it is necessary to use *standardised* techniques. The following case studies represent three situations where the effectiveness of four basic mental skills; goal setting, cognitive restructuring, positive self-talk and relaxation techniques, were investigated. Thus, the principle of the stress management intervention remains constant for each case study and enabled comparison between subjects.

To ensure the subject receives the most appropriate intervention programme and maintain the quality of this intervention, the SMIP techniques were directed towards the specific individual requirements in each case. Consequently, all subjects completed the theory and practice of the mental skills, and the application of these skills was relevant to their specific needs. These needs were identified from the semi-structured

interview, performance profile and questionnaire information obtained at the beginning of the study (see Section 7.1.2). For example, case study 1 required specific application of stress management intervention prior to the show-jumping phase.

#### *Increasing self-awareness and self-help mental training programmes*

An important element of the SMIP was the rider's education in the theory and practice of the stress management techniques. It was suggested that mental training programmes of an educational nature can benefit the athlete by increasing their awareness of their thoughts and feelings (Ravizza, 1989), enabling them to understand the psychological processes underpinning their performance and provide them with techniques to control their mental state. The stress management programme should enable the athletes to rationally assess their thoughts and feelings in a situation, and provide them with learned anxiety control techniques they can implement as required. Consequently, the individual is able to cope with the internal and external demands which are perceived as exceeding his/her capabilities (Lazarus and Folkman, 1984).

Bakker and Kayser (1994) studied the effectiveness of a self-help mental training programme amongst field hockey players and found improvements in performance of a penalty stroke. The role of the sport psychologist in this case was limited to provision of information, for example audio-cassette tapes combining relaxation, concentration suggestions and imagery. The study suggested a need for the athlete to be responsible for his/her mental training. In this research, subjects developed anxiety control techniques through subject-centred learning tasks. The aim was to increase the subject's internal locus of control regarding the stress management techniques and his/her confidence for implementation of these techniques, thereby ensuring the subject was working independent of his/her coach and the researcher (consulting Sport Psychologist).

#### *Collective case study comparisons*

Three collective case studies were undertaken in Investigation 3. Intra-individual analysis of each case study ascertains the effectiveness of the SMIP for changes in psychological variables, performance and perceived success of the rider. Collective

study comparisons were also undertaken to assess whether the SMIP was effective for all three case studies. If concurrent and similar changes were observed, it could possibly be suggested that the effects were due to the implementation of the SMIP rather than other variables such as experience and learning (see Section 7.5).

#### *The stress management intervention techniques*

The aim of the SMIP was to reduce, control or maintain the level of competitive state anxiety experienced by the subject. It is recognised that some athletes require a certain level of anxiety to produce optimal performances and perceive this anxiety as beneficial (Mahoney & Avener, 1977; Jones & Swain, 1992). Thus, maintenance of anxiety levels were required where athletes experienced anxiety as facilitative to their performance based on their previous competition experiences. The techniques (goal setting, cognitive restructuring, positive self-talk, relaxation techniques) were incorporated in this study for the specific purpose of anxiety control.

The goal setting sessions incorporated the theory and development of long term, intermediate term and short term goals for each phase of the horse trial. The goals were specific, measurable and time-phased (Locke & Latham, 1985; Kubistant, 1986) to produce motivation and self-confidence increases for phases of the horse trial. The cognitive restructuring sessions encompassed the theory related to; a) awareness of negative thoughts and their effect on emotions and performance, b) self-monitoring of negative thoughts, c) transformation of negative thoughts to positive thoughts during training and then competition (Meichenbaum, 1985). The positive self-talk sessions again involved the theory of the underlying principles. It also encompassed the development of basic, activity and process self statements. These were then rehearsed during training and then competition. The relaxation sessions incorporated the theory of relaxation. The sessions then included, a) development of a deep relaxation tape for use in the week prior to the competition, b) development of a pre-phase relaxation tape for use prior to each phase of the horse trial and c) development of the five breath technique for subjects to use as required.

The intervention techniques were not counterbalanced between subjects. Due to the small number of competitions available it was impractical to measure anxiety and performance between intervention techniques. If an improvement did occur after an intervention technique then this improvement would go unnoticed. Consequently, the four intervention techniques were regarded as a whole intervention package and anxiety and performance levels were measured pre- and post intervention. The intervention programme incorporated the techniques in the same order for each subject. This aspect of the research design was acknowledged as a limitation of an applied field research study.

### *7.1.2. Baseline assessment*

#### *Subjects*

An opportunity sample was obtained for this study. Subjects were informed of the details of study and then chosen depending on their availability, willingness to volunteer and location. It was important for subjects to be situated reasonably close to each other. This was to ensure it was practical for the researcher to visit subjects each week during the study. Three subjects (1 female Novice rider, 1 female Advanced rider and 1 male Novice rider) comprised the sample for this study and were living in the Merseyside region.

#### *Measures*

*Sport Anxiety Scale:* The Sport Anxiety Scale (SAS; Smith, Smoll & Schutz, 1990) measured multidimensional trait anxiety in sport-specific situations. Smith et al. (1990) developed the SAS and compared it to the Sport Competition Anxiety Test (SCAT; Martens, 1977). They suggested that SCAT was primarily a measure of somatic anxiety. In comparison, the SAS obtains information about cognitive aspects of anxiety as well as somatic anxiety. The SAS is a 21 item self-report questionnaire comprising the subscales; somatic anxiety (9 items), cognitive worry (7) and concentration disruption (5). The SAS is a valid and reliable measure of multidimensional trait anxiety (Smith et al., 1990). It was administered to subjects during the initial baseline assessment sessions during the off-season (see Appendix VIII). The SAS scores for each case study were compared to normative values for high school female athletes

(Smith et al., 1990). Scores which were 1.96 standard deviations above or below the mean for the high school athletes were identified as high or low scores respectively.

*The Performance Profile:* The performance profile (Butler, 1989) was used as a baseline assessment measure to aid the researcher understand how the subject viewed his/her preparation, ability and performance in relation to an ideal standard. The performance profile was developed from Personal Construct Theory (Kelly, 1955, 1963) which emphasises how the individual construes the world and incorporates an understanding of him/herself and his/her outlook. The performance profile in sport develops self-awareness in the individual regarding his/her performance but also facilitates the coach's understanding of the athlete and his/her views about him/herself (Butler, 1989; Butler & Hardy, 1992; Butler et al. 1993). The performance profile thus aided the subject's awareness of areas that need improvement to produce optimal performance. Ravenette (1977) suggested that a person's constructs may operate at a low level of consciousness. Hence, the development of a performance profile may serve to heighten awareness of areas that require improvement.

The performance profile was used to assess an individual's current level of performance and then be re-used to show the individual's improvement (Butler et al., 1993). This can then enhance self-confidence in relation to preparation and ability and in turn reduce the individual's anxiety associated with a competition. From the performance profile assessment, areas for improvement through the SMIP's were identified by the researcher (see Sections 7.2.2, 7.3.2, 7.4.2). The benefits of the performance profile include specific information gathered about the individual and the sport specific nature of this information.

The development of a performance profile was explained to subjects and followed the method used by Butler and Hardy (1992). Initially, subjects were asked to write down the characteristics or qualities of an ideal horse trials rider; "*What in your opinion are the qualities or characteristics of an elite horse trials rider?*". It was emphasised to the subject that there were no right or wrong answers and the characteristics or qualities they recorded were the ones *they believed* an ideal horse trials rider should

possess. The subject discussed and compared his/her list of constructs with the researchers list which was developed prior to the session. Subjects were allowed to add other constructs to their list based on this discussion providing they regarded the construct as an important quality or characteristic of an ideal horse trials rider.

Subjects were then asked to rate the level of skill of an ideal horse trials rider in relation to each construct (Ideal Assessment, IA), on a scale ranging from 1 (*couldn't be any worse*) to 10 (*couldn't be any better*); "*How good would you rate an elite horse trials rider for each of the qualities you have listed?*". This process was repeated for the subject's assessment of his/her own skill level for each construct (Subject Assessment, SA); the subjects were asked "*How good would you rate yourself at the present time on each of the qualities you have listed?*", again responding on the same scale. Constructs with a larger value for the IA compared to the SA were identified as areas for improvement through stress management intervention techniques. The extent of this improvement was also identified as the value required to increase the rating of the SA to the same as the IA.

The SMIP techniques were targeted to improve the constructs identified on the performance profile. The SMIP techniques could have a primary and secondary effect on these constructs. For example, relaxation techniques primarily targeted constructs which related to the subject's ability to relax. The subject might experience a secondary effect of the relaxation techniques such as an improvement in concentration due to the removal of negative thoughts.

It was thus acknowledged that the SMIP techniques of goal setting, cognitive restructuring, positive self-talk and relaxation positively affect the subject's psychological and physical state by causing a primary or secondary effect on constructs in the performance profile. Hence, the aim of the SMIP was to produce primary effects on anxiety and self-confidence related constructs with a possible occurrence of secondary effects on other constructs identified on the performance profile.

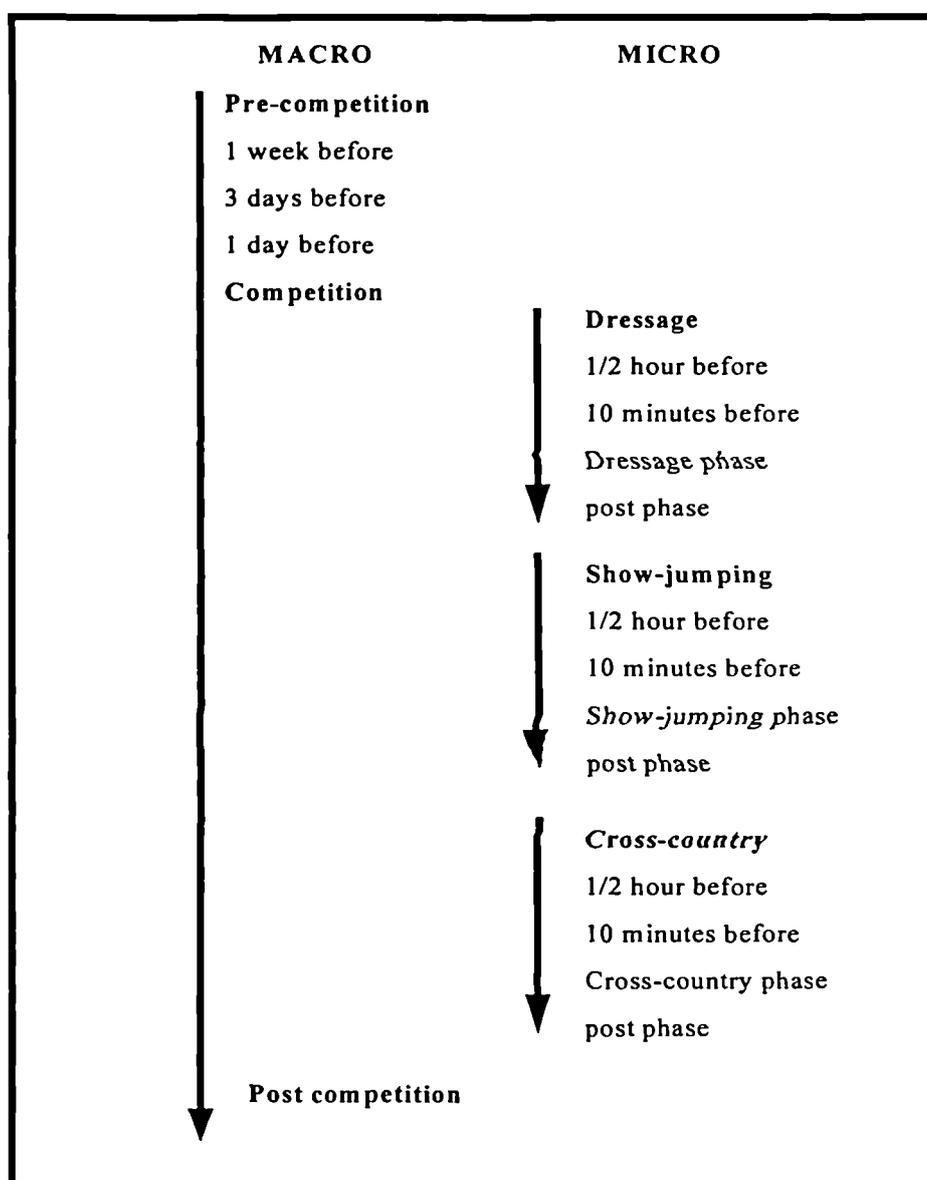
*Semi-structured interview:* The interview was used to gather information regarding the rider's thoughts, feelings and behaviour associated with the competition period; training and preparation for competition, pre-competition, during competition and post competition analysis (see Appendix IX for a copy of the interview schedule). A semi-structured interview was used as it allowed the researcher to follow a set schedule of interview questions and also to probe for further information from the subject based on the responses obtained. Hence, detailed, rich information specific to the individual and the sport could be gathered (Weinberg, Burton, Yukelson and Weigand, 1993). Orlick and Partington (1988) have emphasised the necessity to explore with interviews the athlete's experiences and to learn and understand the terms that athletes use when describing their experiences.

The interviews were scheduled at the convenience of each subject and took place in their own homes. A rapport was developed with each subject prior to the interview, as it is maintained that interviewees who feel comfortable and relaxed in the presence of their interviewer are more willing to share their thoughts, feelings and experiences about situations (Robson, 1993).

The questions developed for the interview were divided into two categories. The first asked demographic questions regarding the subject's age, experience level, equestrian sports they competed in and the level at which they competed. These questions served to gain important background information relevant to the specific areas of the horse trial the intervention should be aimed for each subject and also develop the rapport between the researcher and the subject.

The second section of the interview incorporated questions regarding the subject's competition experience and was based around the temporal patterning of anxiety. In horse trials, the temporal patterning paradigm exists on a macro and micro scale (see Section 2.3.4). The term 'macro' will be defined as the time from the pre-competition phase of the horse trial to the completion of the horse trial and thus incorporates the temporal patterning for the whole horse trial. The term 'micro' will be defined as the time from the start of the preparation of a phase within the horse trial (*dressage, show-*

*jumping or cross-country*) to the completion of that phase and thus incorporates temporal patterning for each phase of the horse trial. Figure 7.1.1 illustrates the macro time-to-event paradigm which incorporates the pre-competition, competition and post competition periods. Within the macro scale is the micro time-to-event paradigm which includes the pre-phase, phase and post phase periods. Figure 7.1.1 illustrates how aspects of the post competition analysis can become antecedents of the subject's psychological state for the following phase. The interactions between the different micro cycles within the macro cycle must be examined carefully. Semi-structured interviews provide a useful way to analyse these aspects for each subject.



**Figure 7.1.1:** The macro and micro temporal patterning of anxiety in horse trials competitions.

The areas covered in the second section of the interview included; *planning the season, training, preparation for competition, the day before the event, the competition day, the dressage phase, the show-jumping phase, the cross-country phase, after the event, external pressures and daily hassles*. The format incorporated set introductions to topic areas and questions. The information gathered in the interview was then expanded upon by ensuring the subject covered a range of topics associated with that question. For example, a set question regarding the dressage phase was;

*“I’d like you to think about your preparation for the dressage phase. Tell me about your routine from about 2 hours before the test, what things do you do?, how do you feel before the dressage phase and what are you thinking about?”.*

The range of associated topics to be covered in this case were; *tacking up, warming up, checking the arena, tack checks, performance expectations, last minutes before the dressage test, performing the dressage test, after the test, reactions, post test analysis and significant others present at dressage test (parents, family, friends, trainer)*. The interview schedule incorporated the range of topics associated with a question and ensured the researcher gained all the relevant information. A copy of the semi-structured interview schedule can be seen in Appendix IX.

The interview analysis was developed by the researcher and her supervisor. Qualitative data provides the researcher with detailed and ecologically valid information about a subject in a natural situation. Denzin and Lincoln (1994) emphasised the interpretive and naturalistic approach to the subject under investigation.

*“...qualitative researchers study things in natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them”.*

Denzin & Lincoln (1994, p. 2)

Many methods are available for the analysis of qualitative data. For example, inductive content analysis, deductive content analysis (Côté, Salmela, Baria & Russell, 1993), Grounded Theory (Glaser & Strauss, 1967), ethnography (Klein, 1986) and time series

analysis (Robson, 1993). The main aim of these methods is to provide a reliable and valid analysis of the data. The method adopted by the researcher should provide the reader with a simple, coherent and representative structure in which to understand the phenomena under study. In quantitative analysis, experimental methods utilise the comparison between groups. It is possible for group analysis to actually mask individual changes due to averaging the scores across the group (Bryan, 1987). Consequently, for the development of stress management intervention programmes, individual data was analysed.

In this study, the researcher adopts an inductive approach to the analysis of the data. The interview data was organised into categories based on their meaning and in some cases for their unique qualities (Coolican, 1994). However, inherent in qualitative data analysis are problems associated with the deficiencies of the human analyst including; objectivity, inconsistency, internal and external validity reliability and data overload (Robson, 1993). It was suggested by Lincoln and Guba (1985) that the concepts of internal validity, external validity, reliability and objectivity were inappropriate when dealing with qualitative data. They proposed four alternatives which reflect the assumptions of qualitative research; *credibility*, the extent to which the inquiry was conducted in a way to ensure the subject was accurately identified and described; *transferability or generalizability*, the extent to which the findings are applicable to another context, *dependability*, the extent to which the researcher attempts to account for changing conditions in the phenomenon under study as well as the changes in the design as a result of a greater understanding of the setting and *confirmability*, the extent to which the findings could be confirmed by another researcher (Lincoln & Guba, 1985). The method adopted for the current study is outlined in the following text. The researchers attempted to maintain a qualitative data analysis method which was generalisable and enabled confirmability. The techniques undertaken to ensure this are highlighted throughout the method.

#### *Interview analysis method*

Researcher A conducted semi-structured interviews with the three case study subjects. Interviews were transcribed with codes in the left hand margin corresponding to the

paragraph responses made by the subject. For reference, the researchers would refer to a particular quote by using the page number and the response code on the interview transcript. This enabled quotes and sections of verbatim to be found easily. Both researcher A and B read through the transcripts to familiarise themselves with the content of the interviews prior to the analysis.

Researcher A identified *meaning units* for each interview transcript. A *meaning unit* is defined as the smallest section of verbatim which provides meaningful information regarding the topic without losing its contextual meaning from the original transcript (Tesch, 1990). At all times, meaning units were developed to focus on psychological or behavioural factors identified by the subject. The meaning units referred to the subject, the subject's horse or another person. Confirmatory validation was undertaken to ensure inter-rater reliability. Researcher B confirmed the meaning units were as small as possible without losing their contextual meaning.

Throughout the process and to ensure credibility, the researchers re-read the interview transcript in conjunction with the meaning units identified and the context of the meaning units to check for accuracy. Hence, the researchers reduced the threats of internal validity and maintained the credibility of the analysis (Lincoln & Guba, 1985). In some cases, the researchers identified meaning units which contained more than one theme. These sections of verbatim were split to produce two meaning units each containing one theme.

The second stage of the process was to develop *first order* categories in which the meaning units could be categorised. Initially, the researchers devised first order categories of antecedents of competitive state, symptoms of anxiety, coping skills and attributions. These categories followed the time-to-event paradigm associated with competitive state anxiety and the state anxiety reaction model (Spielberger, 1989). However, this method proved unsatisfactory due to the ambiguity associated with categorising meaning units into one of these four, first order factors, for there was a significant amount of overlap between the categories. In many cases the researchers could not clearly identify whether the meaning unit was an antecedent of competitive

state or attribution. Visual inspection of the transcripts identified another possible categorisation of the data. The meaning units consistently revolved around 'who' or 'what' the subject had been referring to. The categories chosen reflect this observation. Consequently, the 1st order categories devised were, rider factors, horse factors and significant others factors. This approach was 'data driven' and incorporated an inductive method of qualitative analysis.

The researchers did not feel that the change in first order categories was detrimental to the representation of the data. On the contrary, the researchers believed the new first order categories enhanced the transferability or generalizability of the qualitative structure devised to other settings. Lincoln and Guba (1985) suggested that transferability encompassed the principles of external validity. Hence, in this study, adopting the first order categories above increased the external validity or transferability of the qualitative analysis structure devised by the researchers; it could be utilised in qualitative analysis of other equestrian sports. It also provided the reader with a simple and representative structure with which to understand the phenomenon.

The first order categories were defined as; *categories that identified the source of the meaning unit*. The first order categories are defined as follows:

**Rider Factors (R):-**

Any meaning unit pertaining to the rider's thoughts, feelings, emotions or behaviour.

**Horse Factors (H):-**

Any meaning unit relating to the horse as expressed by the rider.

**Significant Others Factors (SO):-**

Any meaning unit pertaining to a significant other, as expressed by the rider. In this case, significant other refers to family, friends, coaches, trainers, judges, officials, competitors.

In some cases, the researchers identified meaning units that referred to two first order categories at the same time. These meaning units could not be divided as their contextual meaning was lost in these cases. The researchers consequently identified other first order categories to account for these meaning units, thus again ensuring credibility of the analysis. The supplementary first order categories are defined as follows:

**Rider and Horse Factors (R/H):-**

Meaning units that relate to both the rider and the horse, as expressed by the rider.

**Rider and Significant Others Factors (R/SO):-**

Meaning units that relate to both the rider and significant others, as expressed by the rider.

**Horse and Significant Others (H/SO):-**

Meaning units that relate to both the horse and significant others, as expressed by the rider.

The third stage of the qualitative analysis involved the identification of second order categories for each first order category. The identification of second order categories involved inductive analysis, where common clusters of meaning units emerged from the data. The researchers discussed the meaning units to identify psychological and behavioural themes in each cluster. The theme for each cluster of meaning units was appropriately named by the researchers. This process was ongoing throughout the analysis of the meaning units. As more meaning units were discussed, the second order categories were re-clustered where necessary, and in some cases, re-named, to produce the most representative summary of the interview transcript. The objectivity of the second order categories was attempted by both researchers confirming a) the name of the category and b) the credibility of meaning units within that category (Lincoln & Guba, 1985). The final second order categories are listed below together with the criteria for the inclusion of a meaning unit in that category. The second order categories are bipolar and can encompass positive or negative aspects.

**Self-confidence (SC):-**

Information that relates to confidence, esteem, efficacy and morale.

**Worry (W):-**

Information that relates to nervousness, doubt, anxiety, fear, apprehension, dread or distress. It may be perceived as facilitative or debilitating to performance.

**Time Urgency (TU):-**

Information that relates to a lack of time, hurrying, urgency, being rushed, plenty of time, excess time.

**Locus of Control (LoC):-**

Information that relates to the subject's perception of their control over a situation. Can be either an internal or external locus of control.

**Motivation (M):-**

Information that relates to intrinsic, extrinsic, primary and secondary and positive and negative motivation factors. Also, included are references to drive, needs and desires.

**Concentration (C):-**

Information that relates to attention, concentration and focusing.

**Event Readiness (ER):-**

Information that relates to the readiness of the subject and horse for the competition. It can refer to mental and physical readiness.

**Attributions (A):-**

Information that relates to the reasons for a performance or strategy that the rider undertakes. It can refer to internal or external attributions which are stable or unstable.

**Competition Strategies (CSt):-**

Information that relates to a technique or strategy that the rider employs prior to, during or post competition. The techniques can be mental, physical, technical or tactical.

**Self-consciousness (SeC):-**

Information that relates to the subject being unduly aware of his/herself and performance.

**Equity (E):-**

Information that relates to perceptions of fairness. It can relate to the rider, horse and significant others.

**Confidence in Horse (CH):-**

Information that relates to the subject's perception of trust and confidence in his/her horse's behaviour, ability and temperament.

**Horse's Ability (HA):-**

Information that relates to the physical capability of the horse.

**Coping Skills (CS):-**

Information that relates to a technique or strategy that is employed to combat or cope prior to, during or after performance.

**Goals (G):-**

Information that relates to targets that have been set. They may relate to physical, mental, technical or tactical aspects of training and competing.

**Task (T):-**

Information that relates to a particular aspect of training or competing which the subject strives to complete.

**Expectations (Ex):-**

Information that relates to the anticipated outcome of performance or quality of performance.

**Horse's Behaviour (HB):-**

Information that relates to the behaviour of the horse in a specific situation.

**Evaluation of Intervention (EI):-**

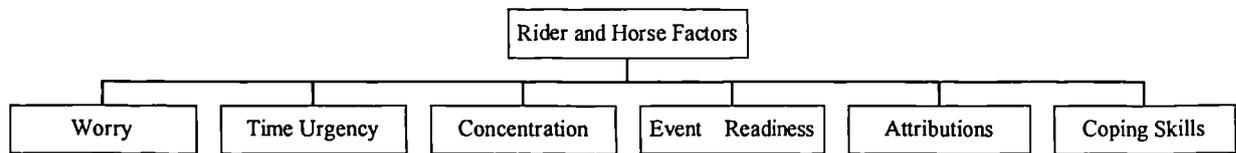
Information that relates to the subject's evaluation of the Stress Management Intervention Programme (SMIP). It may refer to goal setting, cognitive restructuring, positive self-talk and relaxation techniques or the intervention programme as a whole.

**Evaluation of Performance (EP):-**

Information that relates to the subject's evaluation of his/her own performance, the horse's performance or other people's performance.

This method was undertaken for the analysis of semi-structured interview data for each of the three case studies. Visual representation of the first and second order categories in the form of an organisation chart were developed for each case study. This enabled

comparison of first and second order categories between subjects and between pre- and post-study interview analysis for each subject. An example of a first and second order flow chart is shown in Figure 7.1.2.



**Figure 7.1.2:** Organisation chart showing the first order ‘Rider factors’ and the second order factors for subject 1 from the qualitative data analysis of the pre-intervention study interview.

Original quotations were used to illustrate the categories when the data was presented in the research. These were presented in the text with page numbers and paragraph reference details which refer to the original interview transcript. In the present study, all names were changed in the interview transcripts to ensure confidentiality of the subjects. Subjects checked the interview transcripts to ensure credibility of the data and gave permission for the reproduction of quotations (Marshall & Rossman, 1989).

In summary, the qualitative data analysis method adopted for this study utilised inductive approaches. Results were presented in written form highlighting first and second order categories and illustrating these categories with quotes from the transcribed verbatim. Coolican (1994) emphasises the need to reproduce actual quotations from interviews to ‘tell it like it is’. Often original comments provide a greater explanation of a phenomenon than the researchers description. Visual representation of the data were presented as organisation charts and descriptive quantitative results incorporated percentages and frequencies of statements from each interview and allowed comparison between the pre- and post-SMIP data.

*Pre-study assessment booklet:* After initial contact, subjects were required to complete a pre-study assessment booklet at a horse trial prior to the intervention programme. The booklet incorporated self-report questionnaires regarding the perceived causes of anxiety, anxiety levels, attributions, details of goals set for the competition,

performance and the subjects perceived success of the outcome of these goals. The booklet included detailed instructions as to when each questionnaire should be completed. The researcher went through the booklet with each subject, prior to completion, to explain the procedure and clarify any ambiguities associated with the questionnaires, for example, the procedure for completing the modified version of the CSAI-2. A copy of the pre-study assessment booklet can be seen in Appendix X. Scores on the CSAI-2 for each case study subject were compared to normative data (Martens et al., 1990). Scores above or below 1.96 standard deviations from the mean were regarded as high and low scores respectively.

The modified version of the CSAI-2 incorporating the direction dimension scale of anxiety (see Section 5.6) and the Mental Readiness Form (MRF; Murphy, Greenspan, Jowdy & Tammen, 1989 cited by Krane, 1994) were incorporated in the pre-study assessment booklet. The MRF is a short psychometric scale incorporating the subscales cognitive anxiety, somatic anxiety and self-confidence. The cognitive anxiety is measured by the *statement 'My thoughts are:'* and subjects respond by circling a number on the scale 1 (*calm*) to 11 (*worried*). For the somatic anxiety component, subjects are asked to respond to the statement *'My body feels:'* on the scale 1 (*relaxed*) to 11 (*tense*). For the self-confidence component, subjects are asked to respond to the statement *'I am feeling:'* on the scale 1 (*confident*) to 11 (*scared*).

Subjects were required to complete these questionnaires 7 days, 3 days and 1 day before the competition; half an hour before the dressage, show-jumping and cross-country phases on the day of the competition and 1 hour after the competition. This enabled the temporal patterning of multidimensional competitive state anxiety to be analysed. Subjects recorded the time at which they completed the questionnaire. The researcher compared this time with the subjects' start times to ensure each questionnaire was completed at least half an hour prior to each phase.

Goal Setting details were obtained to provide information regarding performance expectations for each subject. Subjects were asked *'Have you set yourself a goal or target for the dressage phase?'* If subjects responded *'Yes'*, they were asked to give

details of this goal. This system was repeated for the show-jumping and cross-country phases. The information was utilised in the comparison of performance expectations, actual performance and perceived success.

The Pre-Event Questionnaire (PEQ) adapted from Jones, Swain and Cale (1990) Pre-race questionnaire was used to evaluate the antecedents of competitive state anxiety in the horse trials competition and was incorporated in the pre-study assessment booklet. (see Section 6.1). Subjects were required to complete this questionnaire as close to 1 hour before the competition as possible.

The analysis of the Pre-Event questionnaire (PEQ) was adapted from Jones et al. (1990). Items in each factor identified by Jones et al. (1990) were collated to provide a total score for that factor. These scores were then compared between the pre- and post-SMIP conditions for each factor; *perceived readiness, attitude towards previous performance, position goal, coach's influence and external environment*. A high score for each factor indicated the individual's increased positive perception of the factor. PRQ normative data were unavailable for comparison to individual case study subject scores (Jones et al., 1990). Therefore, for each case study subject, PEQ scores were evaluated in relation to the maximum score attainable for each subscale on the questionnaire.

The performance scores for each phase of the horse trial was the penalty score awarded during the competition. Hence, the lower the score, the better the performance. Each penalty score is summed to produce a total penalty score for the horse trial. Subjects' actual performance at the horse trial was also recorded via the final scores produced by horse trial officials at the competition. As in Sections 5.6, 6.1 and 6.2, subjects were required to complete, prior to the competition, details of goals set for each phase, and then their perceived success of these goals post competition. This enabled the researcher to assess relationships between performance expectations, perceived success and attributions regarding performance for each phase of the horse trial.

The Causal Dimension Scale II (CDS II) was used to evaluate the attributions subjects made about their performance post competition (see Section 6.2). The CDS II was incorporated in the pre-study assessment booklet and subjects' were asked to complete it one day after the competition. This was to ensure subjects' made rational attributions regarding performance. Attributions made close to the completion of a competition may be affected by the individual's emotions, thus the completion of the CDSII one day after the competition reduced the likelihood of emotion linked attributions. The CDSII scores for each case study subject were compared to normative data of middle-aged sedentary males and females (McAuley, 1991). Normative data relating to a sporting population were unavailable.

The actual performance was obtained in terms of the subject's penalty score for each phase of the horse trial and the total penalty score for the horse trial. Perceived success was evaluated for each phase via the evaluation sheet in the assessment booklet. Subjects were asked to rate their goal achievement for each phase of the horse trial on the scale 1 (*not at all*), 2 (*somewhat*), 3 (*moderately so*) and 4 (*very much so*). Subjects were asked to provide details to each rating scale to provide qualitative information regarding their evaluation. The subjects were also asked to rate their perceived success for the whole horse trial on the scale 1 (*not at all successful*), 2 (*somewhat successful*), 3 (*moderately successful*), and 4 (*very successful*). Again, subjects were asked to provide details of this rating.

The information obtained from the questionnaire booklet, trait questionnaires, semi-structured interview and performance profile was used to identify areas for improvement for each subject through a SMIP. The information obtained was assessed to indicate specific aspects of the horse trial where a stress management technique would result in 1) a reduction in, or control of the anxiety experienced by the subject, 2) an increase in the subject's self-confidence, 3) an improvement in performance, and 4) holistically, a more positive competitive experience for the subject.

### *7.1.3 Development, content and application of the stress management intervention programme*

#### *Development and content of the SMIP*

The initial baseline assessment provided the researcher with detailed information regarding the subject's psychological state throughout competition, the antecedents of this state, the effect on performance and the subsequent evaluation of his/her performance through causal attributions. The assessment concentrated on the subject and his/her interaction with the environment and consequently gained information that was specific to that individual for dressage, show-jumping and cross-country training and competition settings.

The researcher then developed a provisional SMIP based on the areas identified for development. The four mental training skills were incorporated in the SMIP and were targeted at the whole horse trial. The baseline assessment also identified the particular phases of the horse trial that the SMIP should be aimed at for each case study subject. The content of each programme is detailed in Section 7.2.2 for subject 1, 7.3.2 for subject 2, and 7.4.2 for subject 3.

The researcher discussed the provisional SMIP with each subject to ascertain its face validity, content validity and its relevance to their needs. Following the discussion, a final SMIP was identified for each subject which was implemented through the multiple baseline design.

#### *Implementation of the SMIP*

The SMIP's were implemented into the training and competition schedules of the three parallel case study subjects ensuring there were sufficient time for post-SMIP analysis at a horse trials competition. Subjects were advised the commencement and completion dates of their SMIP.

The SMIP comprised 10 sessions (1 per week) which covered the preliminary sessions, theory, education and practice of the stress management techniques, the development

of pre-competition and competition checklists, the implementation of the techniques into competition and the evaluation of the SMIP (Table 7.1.1). Initially, three preliminary sessions incorporated baseline assessment and formulation of the SMIP. Eight sessions then comprised the SMIP intervention followed by week 9, the competition assessment and week 10, the evaluation of the SMIP. The weekly intervention sessions timetabled with each subject were adhered to as closely as possible. However, due to the applied nature of the research, where the intervention programme was implemented in 'real life' situations, some sessions were affected by injury and illness. These sessions were inevitably postponed to other dates, consequently, the time lag between sessions varied between subjects. Intervention sessions which were held some time after the previous session incorporated a summary of the previous sessions and a thorough evaluation of the SMIP techniques before introducing a new SMIP technique. The dates of the intervention sessions for each subject were recorded and time variations in the intervention were acknowledged in the inter-case study analysis (Section 7.5). Details for each subjects intervention programmes can be seen in Sections 7.2.2, 7.3.2 and 7.4.2.

**Table 7.1.1:** The stress management programme implemented with each subject

<b>Sessions</b>	<b>Intervention</b>	<b>Homework</b>
Preliminary session 1	Semi-structured interview about horse trials training and performance	
Preliminary session 2	Proof read of interview transcript by subject; performance profile; timetable of competitions.	
Preliminary session 3	Introduction to Sport Psychology and aims of SMIP; discussion of SMIP content based on performance profile.	Think about personal goals for season
1	Set Long Term Aim and long terms goals for 3 - 4 month period	Set intermediate and short term goals
2	Complete goal setting plan for 3 - 4 month period; sign and witness goal setting sheets.	
3	Check goals setting plan and goal evaluation section; introduction to cognitive restructuring theory; cognitive restructuring exercise related to horse trials.	Thoughts Awareness week and cognitive restructuring exercise.
4	Check thoughts awareness and cognitive restructuring week work; check and re-assess goal setting plan;	Continue thought awareness and cognitive restructuring.
5	Introduction to positive self-talk theory, examples and exercise; development of positive self-statements (basic, activity & process statements).	Rehearse positive self-statements.
6	Check goal setting evaluation section and re-assess plan; introduction to relaxation techniques; conducted a deep relaxation session (taped).	Practise deep relaxation session tape.
7	Check goal setting evaluation, evaluation of deep relaxation sessions; conduct a pre-phase relaxation session (taped)	Continue deep relaxation sessions, practise pre-phase relaxation tape.
8	Introduce five-breath technique; link to cognitive restructuring and positive self-talk. Develop pre-competition and competition checklists. Assess personal constructs via a performance profile. Evaluation of progress through attainment of goals in the goal setting programme. Administer post-intervention study assessment booklet.	Complete pre-competition and competition checklists.
9 - Competition	Competition (post-intervention study assessment booklet)	Complete post- study assessment booklet
10 - Evaluation	Assessment and evaluation - semi-structured interview (Competition evaluation, intervention programme evaluation). Performance Profile, administer Sport Psychologist Consultant Evaluation Form.	

#### *7.1.4 Evaluation of the stress management programme*

##### *Performance profile*

The performance profile was undertaken by the subjects in week 10 of the intervention programme immediately prior to a competition. The purpose of the assessment of personal constructs at this stage was to show the subject the change in each construct via their self-rating score.

##### *Post-study semi-structured interview*

A semi-structured interview was used to assess the subject's competitive psychological state, actual performance and perceived success, post intervention. The post-study interview followed the same format as the pre-study semi-structured interview identified in section 7.1.2. The topics covered in the post-intervention interview gathered information regarding the subjects' perception of the temporal patterning of anxiety on both macro and micro scales for the horse trial. Qualitative interview analysis identified constructs which related to the subject's competitive psychological state, feelings and perceived effect on performance. The data were compared to the interview analysis results obtained prior to the intervention study.

The post-study interview also obtained the subject's perceptions of the SMIP with regard to its relevance, usage, ease of understanding and effectiveness. This assessment was important to evaluate the perceived benefits gained by the subjects from the intervention. For the analysis of post-SMIP interviews, two second order categories were added namely; *evaluation of performance* and *evaluation of intervention*. This enabled meaning units referring to these aspects to be categorised during the interview analysis.

##### *Post-study assessment booklet*

The post-study assessment booklet comprised the same format and questionnaires as the pre-study assessment booklet (see Section 7.1.2). This enabled direct comparisons to be made between competition antecedents, competitive state anxiety levels and direction, causal attributions, actual performance and perceived success prior to and post intervention study.

The case studies are reported in Sections 7.2, 7.3 and 7.4. These sections report the stress management programmes implemented for each subject, the intra-subject analysis and compare pre-intervention with post-intervention data. Further analysis of the intervention programme involved inter-subject analysis. Data was compared between the 3 collective case studies to assess tentative relationships between skill level and sex (see Section 7.5).

## 7.2 Case study 1

### 7.2.1 Introduction

It is the aim of sports psychologists to help athletes develop an optimal mental state for competition. This may require psyching up strategies, relaxation strategies or enhancing self-confidence. Case study 1 formed an applied sport psychology field based study and was one subject in the three collective case studies formulated to assess the effectiveness of an individualised SMIP. The case study reports the implementation of a stress management intervention programme for subject 1 to develop an optimal mental state for horse trials.

The intervention programme followed the generic design, content and application details explained in section 7.1. The individualised aspects of the SMIP for subject 1 are reported here. The case study incorporated the analysis of psychological constructs of the subject and performance both pre- and post-intervention. The effectiveness of the SMIP was assessed in relation to the subject's psychological state and performance throughout competition. In sections 7.2 and 7.5, case study 1 will be referred to as 'subject 1'.

The aims addressed the areas for improvement identified by subject 1 and the baseline assessment which are presented later in this section. The aims of the study were to;

- 1) provide subject 1 with practical knowledge of goal setting, cognitive restructuring, positive self-talk and relaxation techniques, which could be utilised by subject 1 in competition as required.
- 2) enable subject 1 to control levels of competitive state anxiety throughout horse trials, particularly the show-jumping phase.
- 3) develop a positive mental state for subject 1's performance in horse trials, particularly the show-jumping phase.

### *7.2.2 Subject Information*

The subject was a 43 year old female who was an experienced horse rider and had been riding for 33 years. She had competed at BHS horse trials Novice level for two years. She had also competed in both show-jumping and dressage equestrian sports. She regarded the show-jumping phase of a horse trial as her worst phase. She became highly anxious prior to this phase reporting worry and a severe lack of self-confidence. The cause of this anxiety may be associated with a previous fall in the show-jumping phase of a competition.

She competed on a 6 year old, 16.1hh Irish Draught cross Thoroughbred gelding. She considered the horse to be relatively experienced for the dressage and show-jumping phases of the horse trial, yet less experienced for the cross-country phase. She perceived the horse to have a very calm temperament, particularly during training. In competition, however, she reported that the horse consistently became very strong during the jumping phases of a horse trial. She perceived this as a problem because she lacked control of the horse. Her aims were to improve overall horse trials performance, and to reduce the worry and increase her confidence for the show-jumping phase. The aims were identified by subject 1 during discussions with the researcher in the baseline assessment sessions.

### *Measures*

The trait anxiety questionnaires, pre-study assessment booklet, semi-structured interview and performance profile formed the baseline assessment of competitive state anxiety subject 1 prior to the implementation of the stress management intervention programme (see Section 7.1 for detailed information of the baseline assessment). The information gathered was specific to the experiences of subject 1 in training and competition. This enabled the development of an individualised intervention programme for subject 1 based on the four stress management techniques; goal setting, cognitive restructuring, positive self-talk and relaxation.

Post-intervention study measures incorporated the post-study assessment booklet, post-study semi-structured interview and performance profile (see Section 7.1.4 for a

detailed explanation of the post intervention study data collection). The post study assessment evaluated competitive state anxiety, performance, perceived success and the subject's perceptions of the effectiveness of the stress management intervention programme. Pre and post study measures were compared to assess the effectiveness of the SMIP.

*Baseline assessment*

The SAS scores for subject 1 are displayed in table 7.2.1 and show the component scores and the total score.

**Table 7.2.1:** SAS scores for subject 1.

SAS component	Score (max <sup>m</sup> score)
Cognitive worry	10 (28)
Somatic anxiety	18 (36)
Concentration disruption	19 (20)
Total	57 (84)

In comparison to the SAS scores obtained for high school female athletes (Smith, Smoll & Schutz, 1990), subject 1 reported a low level of cognitive worry and a moderate level of somatic anxiety. The concentration disruption reported by subject 1 was, however, identified as a high score. Smith et al., (1990) identified that concentration disruption was significantly related to performance and differentiated between high and low level performances. It is thus suggested that due to the high concentration disruption score, subject 1's performance in horse trials may be significantly decreased. The SMIP aimed to reduce the disrupted concentration reported by subject through relaxation techniques.

In a performance profile, subject 1 identified 24 constructs that she believed were characteristic of an elite horse trials rider (see section 7.1.2 for a detailed explanation of the performance profile). The constructs identified by subject 1 included both psychological and technical qualities associated with horse trials (Figure 7.2.1).

The performance profile enabled the researcher and subject 1 to see the areas of discrepancy between the IA and SA (Figure 7.2.1) and thus identify areas for improvement. The innermost circle of Figure 7.2.1 represents a rating of 2 on the scale: 1 (*couldn't be any worse*) to 10 (*couldn't be any better*). The rating scale score then increases outwards from the centre by 1 for each unit, to a rating of 10 on the outer circle. The construct is identified by the label in the outermost circle. For each construct, subject 1 rated the IA as 10. Hence the discrepancies between the IA and the SA as identified by subject 1 are represented by the white areas on the performance profile. The techniques of the SMIP aimed to increase the SA score identified by subject 1 for these constructs.

SMIP techniques primarily targeted anxiety and self-confidence related constructs namely; *ability to relax, positive attitude, dealing with criticism, dealing with mistakes and self-confidence* (Figure 7.2.1). They also produced improvements in other constructs of the performance profile. Constructs that related to physical parameters; *balance, technique, awareness of speed, accuracy, awareness of harmony and movement, fitness and stamina*, were targeted by goal setting which focused on the rider's training programme. This technique may also have a secondary effect of boosting subject 1's confidence due to her awareness of improvements in these areas.

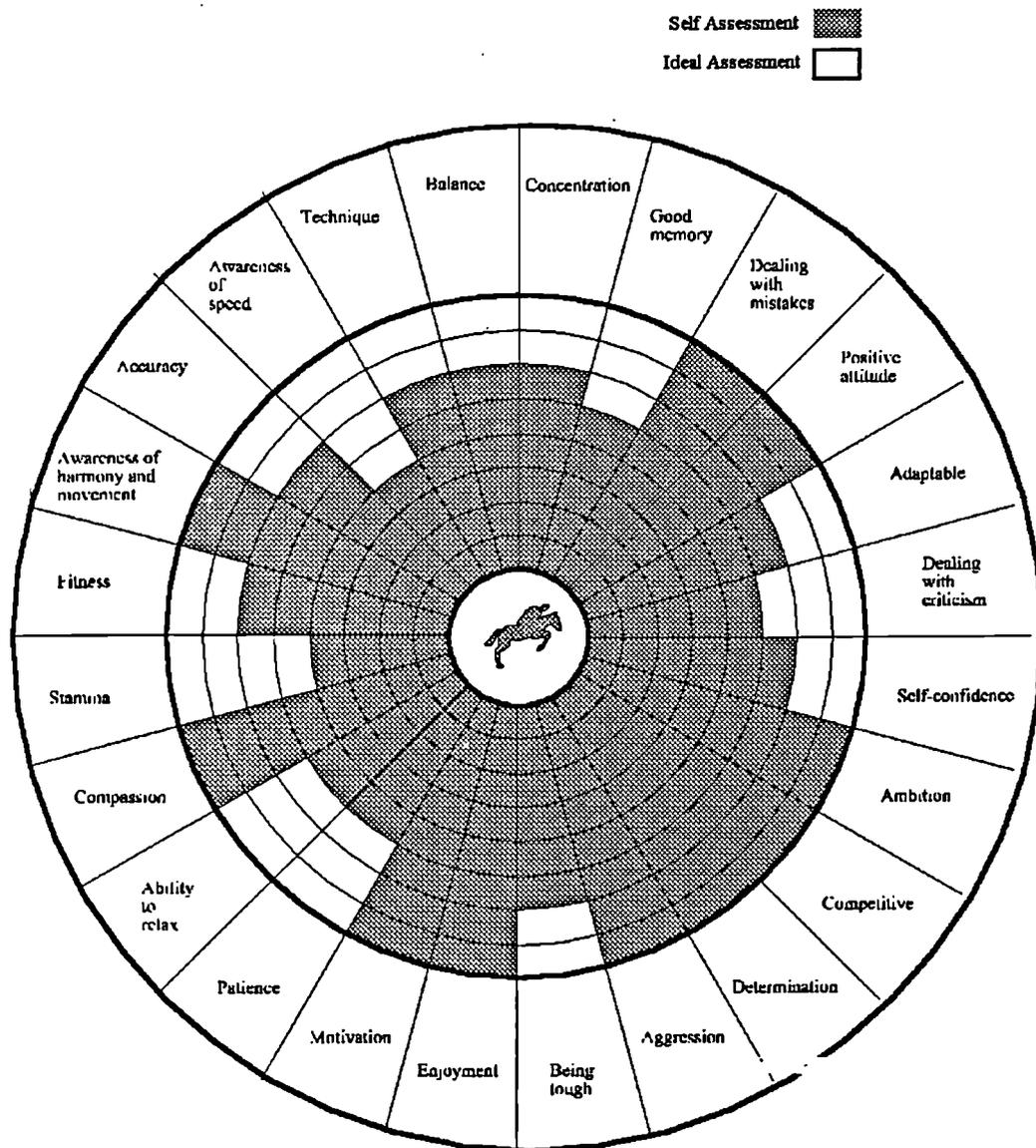
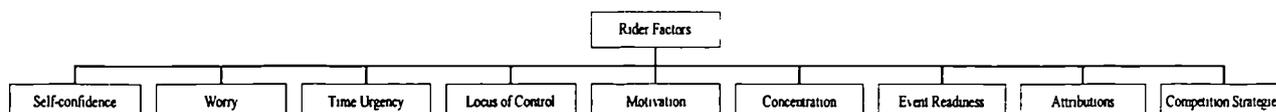


Figure 7.2.1: Performance profile for subject 1 showing the rating of constructs prior to the stress management intervention programme (1/2/95).

The semi-structured interview provided information about subject 1 prior to the intervention study and was analysed using the method explained in section 7.1. The interview with subject 1 lasted 1 3/4 hours. A summary of the interview analysis is presented here. The full interview analysis is located in Appendix XI.

The interview analysis identified 116 meaning units. These were categorised into first order factors; Rider (R), Horse (H), Significant Others (SO), Rider and Horse (R/H) and Rider and Significant Others (R/SO) Factors. 62% of the meaning units referred directly to the rider and comprised nine second order factors (Figure 7.2.2).



**Figure 7.2.2:** Second order categories identified from the first order: Rider Factors for subject 1.

Fifty per cent of the meaning units identified in second order categories in Figure 7.2.2, for example; worry, self-confidence and locus of control, were related specifically to the show-jumping phase of the horse trial. Subsequent analysis of these second order factors showed that when meaning units referred to the show-jumping phase, 65% were negative statements. The majority of positive statements referred to the dressage and cross-country phases, where 70% of all dressage statements were positive and 53% of all cross-country statements were positive.

In the second order factor; self-confidence, all quotes relating to the show-jumping phase were negative and referred to a lack of confidence in this phase. Subject 1's confidence is related to the dressage and cross-country phases of the horse trial. Subject 1 reported increased self-confidence when she had completed more practice and preparation for the show-jumping phase.

“...the dressage I don't have a problem...it's the show-jumping”

p.13, A86

Subject 1's worry regarding the show-jumping phase was clearly evident. Out of a total of 14 meaning units for the second order factor, worry, 10 meaning units were negative. Sixty per cent of these meaning units referred to the show-jumping phase. These feelings may have been related to a bad fall that subject 1 experienced during a show-jumping competition.

“...least favourite...show-jumping. I don't know why because I used to do more show-jumping than anything else...it never used to be a problem to me. I've had a fall...a bad fall so whether that is it I don't know...but now it is my weakest phase”

p.3, A26-27

The references to nervousness and apprehension related to the show-jumping phase in subject 1's interview clearly follow the time-to-event paradigm with an increase in worry as the show-jumping phase approached (Martens et al., 1990).

“(feelings from 2 hours before show-jumping to going in arena) They get worse...I know I've got to go in there and I've got to do this”

p.27-28, A169

“(waiting for bell in show-jumping ring) I'm thinking “Oh God is this canter right for fence number one”, or “Have I got enough or have I got too much?”

p.28, A175

The worry experienced by subject 1 in the show-jumping phase was exacerbated by the horse's ability and behaviour in this phase. Subject 1 perceived that the show-jumping was the phase that her horse was most capable at. However, she referred to control problems in this phase causing her distress. Subject 1 considers her horse to be very capable in the dressage and cross-country phases.

“He doesn't normally give me any problems to worry...except in the show-jumping”

p.17, A110

“(show-jumping) He just takes over...and then gets very bossy...it is very annoying to ride him when he is like that...because you know what he can do”

p.6-7, A53-54

Subject 1's feelings regarding the show-jumping phase appeared to be related to her self-consciousness in this phase. 21% of the meaning units categorised in the first order, significant others factor, referred to fear of embarrassment in the show-jumping.

“(Show-jumping)...when I go to a competition...the apprehension...I think it's probably people seeing me make a mess of it in that phase”  
p.12, A81

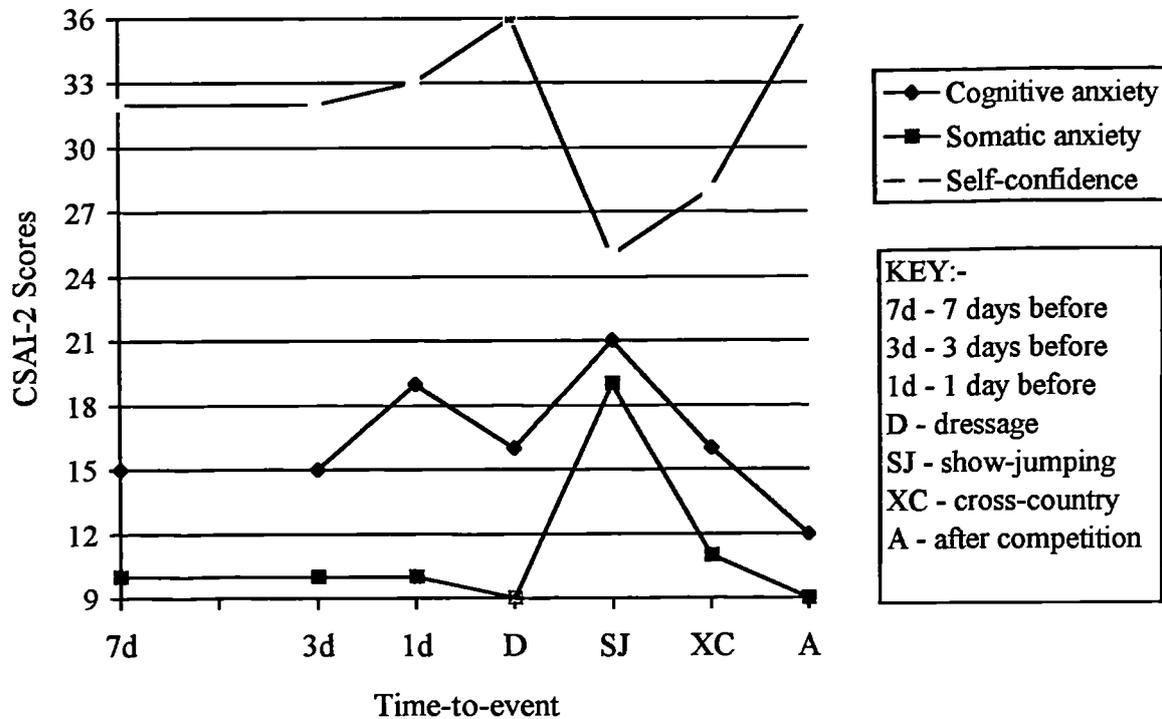
The second order factor, locus of control, was identified in three different 1st order factors; rider factors, significant others factors, rider and significant others factors. Six out of seven meaning units exhibited an external locus of control and referred to the show-jumping. The evidence suggested that subject 1 felt dependent on external factors for the show-jumping phase.

“I need Sarah because she's good at the show-jumping and organises and I feel sometimes as though I can't cope f she's not there”  
p.27, A164

The interview analysis indicated that subject 1 experienced problems in the show-jumping phase whereas her strengths were in the dressage and cross-country phases. Based on the interview analysis, the SMIP was specifically targeted at the show-jumping phase of the horse trial (see Appendix XI).

The pre-study assessment booklet provided information about subject 1 during a Novice horse trials competition (see Section 7.1.2 for a detailed explanation of this baseline assessment measure). The CSAI-2 obtained information regarding the temporal patterning of state anxiety prior to, during and after the competition. Prior to the horse trial, subject 1 reported relatively stable levels of somatic anxiety and self-confidence. Whereas cognitive anxiety was found to increase the day before the competition. The CSAI-2 intensity scores for the dressage phase indicated that subject 1 felt less anxious (CA = 16, SA = 9) and more confident (score = 36) in comparison to the show-jumping phase (CA = 21, SA = 19, SC = 25) (Figure 7.2.3). The CSAI-2 scores for the dressage and show-jumping supported the information obtained in the

interview analysis. In the cross-country phase, subject 1 did not experience a state anxiety reaction as intense as in the show-jumping phase.

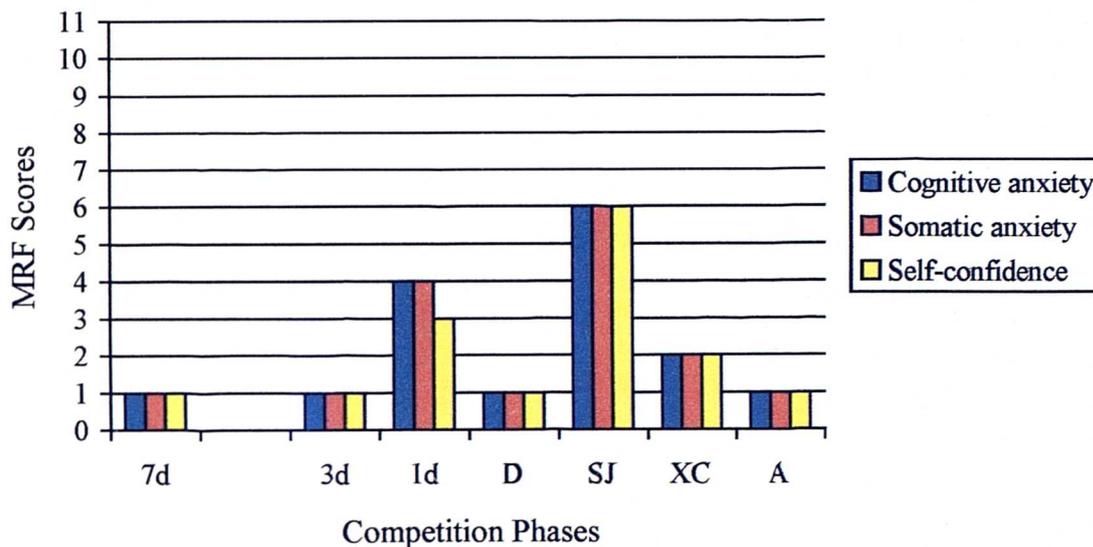


**Figure 7.2.3:** The temporal patterning of intensity scores for CSAI-2 components for subject 1 prior to implementation of the SMIP (Note: the time axis is not drawn to scale).

At all time points throughout the horse trial, subject 1 perceived the CSAI-2 intensity scores to be facilitative to her performance (CSAI-2 direction scores = 27). An exception to this was the show-jumping phase where subject 1 perceived the somatic anxiety (CSAI-2 direction scores for SA = 23) to be less facilitative to her performance than in the dressage and cross-country phases.

Although the CSAI-2 direction scores obtained for subject 1 indicate her perception of her anxiety and self-confidence as facilitative to performance, she identified in discussions with the researcher a desire to reduce anxiety levels prior to the show-jumping phase. This is reflected in the self-rating scores of the constructs; ‘self-confidence’ and ‘ability to relax’, on the performance profile. The Mental Readiness

Form (MRF) provided evidence to support the CSAI-2 scores; in particular, the large increase in anxiety prior to the show-jumping in comparison to the dressage and cross-country phases (Figure 7.2.4). The aim of the SMIP was to reduce competitive state anxiety levels experienced by subject 1 in the show-jumping and most importantly, to maintain the perception of these levels as facilitative to performance.



**Figure 7.2.4:** The temporal patterning of MRF scores for subject 1 prior to implementation of the SMIP (Note: the time axis is not drawn to scale).

Figures 7.2.3 and 7.2.4 highlighted the increase in anxiety levels the day before the competition. Important preparation for a horse trial occurs at this stage, for example, checking and packing equipment. Increases in anxiety could distract the subject's attention away from this activity and cause her to forget an important item of equipment. The SMIP was targeted at the pre-competition period with an emphasis on good preparation for the competition.

The analysis of the antecedents of anxiety via the Pre-event questionnaire (PEQ) revealed that subject 1 had moderate scores for factors, *perceived readiness* (a score of 36 out of a total of 63), *position goal* (a score of 12 out of 18) and *external environment* (a score of 14 out of 27). Subject 1 reported maximum scores for *attitude*

towards previous performance (36) and coach's influence (18). The first factor perceived readiness for competition was primarily targeted by the SMIP for subject 1. The CDSII provided scores for the components; locus of control, stability, external control and personal control in relation to a primary reason for the performance outcome identified by the subject (Table 7.2.2). The primary reason identified by subject 1 was her effort on the competition day. Subject 1's score for locus of causality was low in comparison to a male and female middle-aged sedentary sample (McAuley, 1991). Subject 1 also obtained a very low score for external control and a moderate score for personal control (McAuley, 1991). Thus, subject 1 believed she was in control of her performance at this competition and was attributing her success internally.

**Table 7.2.2:** CDSII component scores for subject 1 prior to the implementation of the SMIP.

Component	Score / percentage of max <sup>m</sup> score
Locus of causality	13 / 36%
Stability	20 / 55%
External Control	3 / 8%
Personal Control	24 / 66%

The information obtained from the interview analysis forms a similar picture to the information obtained on the CDSII. Five out of six meaning units in the interview analysis related to the first order factor 'Rider Factors' and were internal attributions. In this case, however, the attributions were in relation to perceived failure situations.

“ It's mostly the show-jumping... aggravation with myself because I feel that I have let him down...”

p.33, A198

Consistent internal attributions in failure situations could be detrimental to the subject's future expectations for competition, possibly resulting in learned helplessness or a self-fulfilling prophecy (Kubistant, 1986). The SMIP incorporated cognitive restructuring to change subject 1's negative perceptions to positive in all areas of the competition, particularly the show-jumping.

The results obtained from the baseline assessment identified the content of the SMIP. The SMIP techniques were targeted at all phases of the horse trial and in view of the evidence provided in this section, the SMIP was specifically targeted at the show-jumping phase for subject 1.

### *Content of the SMIP*

The 8 week stress management intervention programme comprised education and practice in goal setting, cognitive restructuring, positive self-talk and relaxation techniques (see Section 7.1.3). The aim was to reduce or control the competitive state anxiety experienced by subject 1 during the horse trial and particularly during the show-jumping phase (Table 7.2.3).

**Table 7.2.3:** Content of the SMIP for subject 1.

Phase	Goal Setting	Cognitive Restructuring	Positive Self-talk	Relaxation
Whole event	increase awareness of preparation and perceived readiness; maintain motivation	improve perceptions relating to competition and analysis of performance	produce positive statements regarding preparation & ability of rider and horse	provide subject with techniques to reduce tension and clear mind for competition
Dressage				
Show-jumping	increase preparation and perceived event readiness; increase awareness of accuracy	produce a positive perception of readiness for competition; increase ability to deal with mistakes	produce a positive attitude regarding preparation, ability, accuracy and control of horse	enable subject to reduce tension and clear mind of negative thoughts; allow subject to focus of task
Cross-country	increase awareness of speed			

**Note:-** The information presented in this table is in a condensed format from the information presented to the subject.

### *Intervention*

The stress management intervention programme sessions between the researcher and subject 1 lasted between 1 hour and 1 1/2 hours. A total of 10 sessions were held with

subject 1; the 8 week stress management intervention programme; *week 9*, the competition; *week 10*, assessment and evaluation (see Table 7.1.3 for the generic timetable in Section 7.1.3).

#### *Post Intervention*

The post study measures obtained from the performance profile and post-study assessment booklet were collated for subject 1. The researcher conducted the post SMIP semi-structured interview as described in Section 7.1.4 one week after the competition assessment. The interview transcript was analysed using the qualitative interview analysis explained in Section 7.1.2. Competition results were obtained via the post-study assessment booklet.

#### *Data Analysis*

The pre-SMIP and post-SMIP data were compared to assess the changes in subject 1's anxiety levels, causes of anxiety, attributions and performance between these two time points. The analysis incorporated both qualitative and quantitative results.

#### *7.2.3 Results*

The results for subject 1 were analysed in terms of the changes in psychological constructs, horse trials performance and the evaluation of the SMIP.

#### *The psychological constructs*

A performance profile was undertaken in week 8 of the SMIP, after the completion of the SMIP techniques and prior to the competition assessment. The procedure followed was the same as the procedure prior to the SMIP (see Section 7.1.2). The constructs were rated without reference to the previous performance profile scores (Figure 7.2.1). A comparison was made to the scores obtained for the previous performance profile (Figure 7.2.5, p. 228).

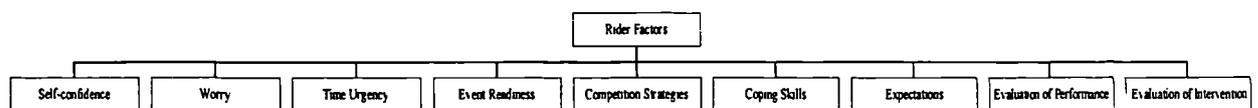
Subject 1's rating of 12 constructs had increased by either 1 or 2 units on the rating scale. Five of these constructs related to physical aspects of riding; *balance, stamina, awareness of speed, accuracy, fitness (horse)*. The other constructs were

psychological variables relating to performance; *confidence, being tough, patience, good memory, ability to relax, adaptable and dealing with criticism* (Figure 7.2.5, p. 228).

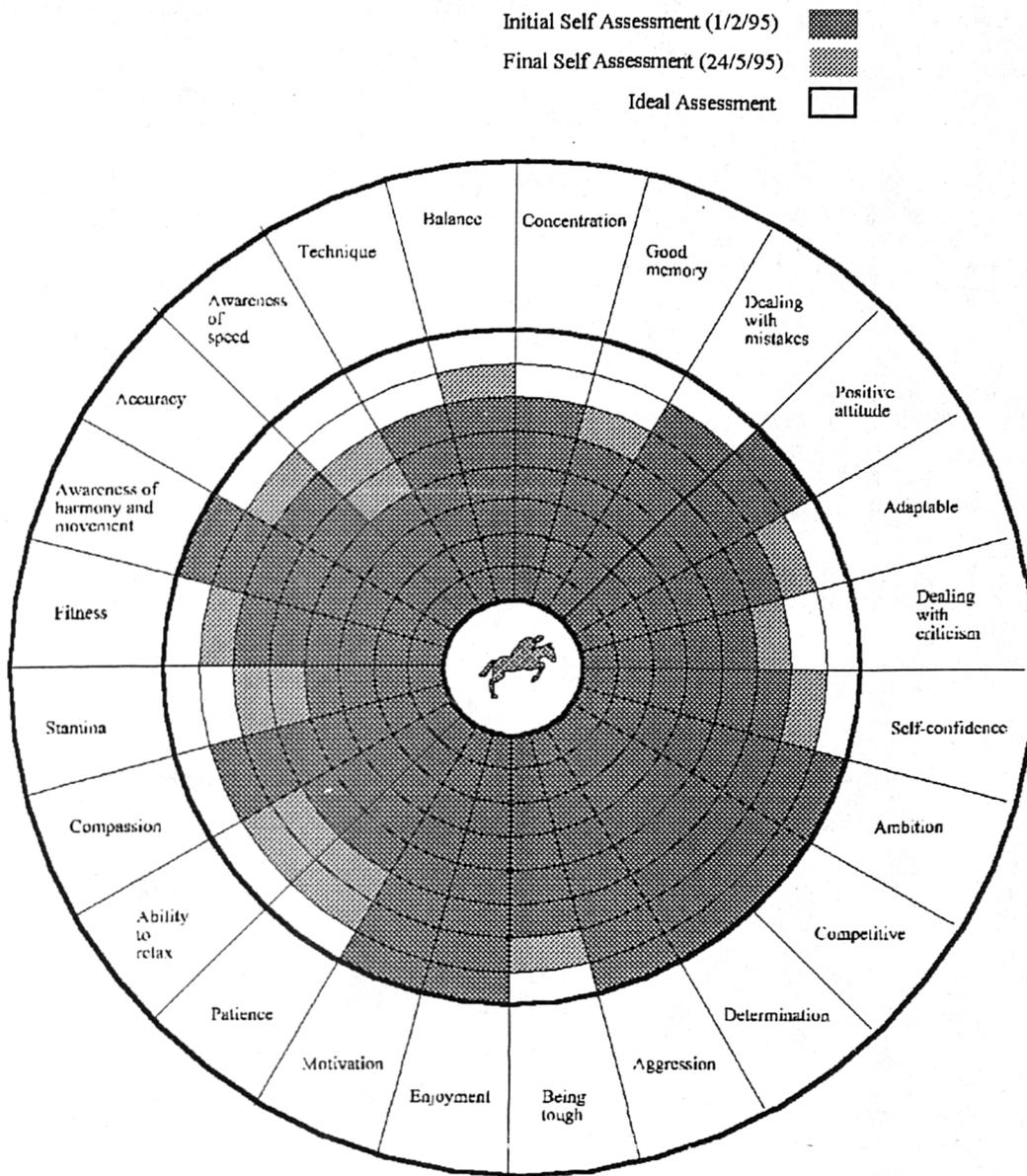
Ten constructs were rated the same after the SMIP as before the SMIP; *concentration, positive attitude, ambition, competitive, determination, aggression, enjoyment, motivation, awareness of harmony and movement, technique*. Two constructs were rated lower, by 1 unit each, namely; *dealing with mistakes and compassion*.

The post study interview lasted 1 hour and the analysis provided descriptive statistics and qualitative results for subject 1. The analysis identified 53 meaning units categorised within the first order factors; Rider, Horse, Rider / Horse and Rider / Significant Others factors. In contrast to the pre-study interview, the analysis of the post-study interview did not identify meaning units in the category Significant Others Factors (S/O).

Sixty nine per cent of the meaning units referred directly to the rider and were then categorised into the second order factors of *self-confidence, worry, time urgency, event readiness, competition strategies, coping skills, expectations, evaluation of performance and evaluation of intervention* (Figure 7.2.6) and was similar to the 62% of meaning units identified as Rider factors in the pre-study interview analysis.



**Figure 7.2.6:** Second order categories identified from first order factor; Rider factors for subject 1 post SMIP.



**Figure 7.2.5:-** Performance profile for subject 1 showing the initial and final assessment of each construct. The final assessment was after completion of the SMIP.

In the post-study interview analysis, 42% of the meaning units referred to the show-jumping phase which was reduced from 50% in the pre-study interview analysis. Nine meaning units were negative and six were positive. Negative meaning units were related to subject 1's preparation for the show-jumping phase. Initially, she was ill and missed show-jumping competitions which were to be used as training sessions. 14% of meaning units in the first order Rider factors referred to negative aspects of event readiness relating to subject 1's illness and her lack of preparation for the show-jumping. Secondly, the horse's behaviour was uncharacteristic and was consistently refusing fences.

*“(preparation for the show-jumping)...on the Saturday, I started with the virus, and I was supposed to be going to Eccleston, jumping, and then I couldn't get out and then I couldn't start work again properly until the Monday before, and so it was really a bad week”*

p.3, A13.

*“(show-jumping) He backed off as soon as he went in the arena which he's never done”*

p.7, A41

In spite of the problems with the show-jumping training prior to the competition, the interview analysis for subject 1 suggested she experienced an increased level of coping in the show-jumping phase. Prior to the SMIP, the coping skills employed in the show-jumping were related to subject 1's dependence on significant others for help and support (see Section 7.2.2, *Baseline assessment*). However, post SMIP, all meaning units identified as coping skills exhibited a positive strategy to coping particularly in the show-jumping phase. This was also supported by subject 1's post-study competition evaluation.

*“(prior to the show-jumping) Awful, it was awful! I had to keep sorting myself out... I said “I can do it” and I did the breathing and “I can do this and I can sort it out...we may struggle, but you can get round here”...and it sort of stopped me backing off”*

p.10, A54-56.

*“The horse was not sufficiently between hand and leg and I had to be strict with myself and pull out all the stops to get round, but we did it”*

(Post-study assessment booklet - evaluation sheet)

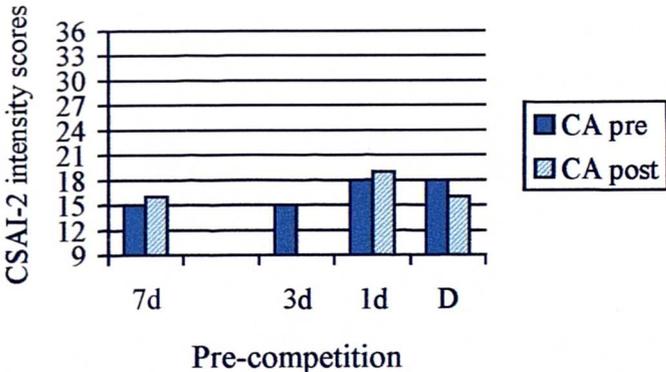
In contrast to the pre-study interview analysis, subject 1 reported problems in the cross-country phase in the post-SMIP condition. She then reported, however, how she employed pre-phase relaxation technique to improve her feelings prior to the phase.

*“(cross-country) ...when you look down the board, there were not that many clear jumps, so really I wasn’t that impressed, so then I went and listened to the tape and did feel better”*

p.14, A81

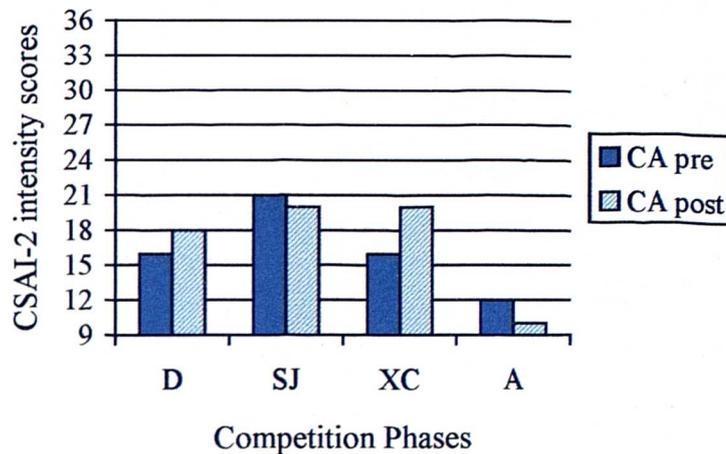
The CSAI-2 post SMIP scores were compared to the scores obtained pre-SMIP. The figures have been divided into pre-competition and competition periods to indicate the differences between these time points. The dressage phase forms the link between the two time points because this measurement was taken prior to the whole event and can therefore still be considered as pre-competition. It also forms the first measurement of anxiety on the competition day and thus can be used to compare anxiety levels between the phases of the competition. This division has been used for CSAI-2 scores for this subject and for subjects 2 and 3 (see Section 7.3 and 7.4). The figures will be easily identified as they will be classified as figures a and b for each CSAI-2 component.

Slight fluctuations (1 or 2 units) in cognitive anxiety were observed in pre-competition phase between the pre- and post-SMIP conditions (Figure 7.2.7a). No data was obtained for the CSAI-2 scores 3 days before the post SMIP competition due to subject 1’s illness at that time.



**Figure 7.2.7a:** Intensity scores for CSAI-2 cognitive anxiety (CA) for subject 1, prior to and after the SMIP (Note: the time axis is not drawn to scale).

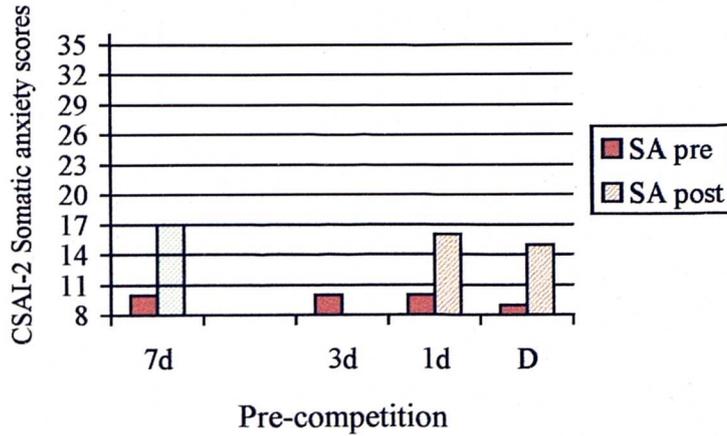
For the competition phases, Figure 7.2.7b shows small fluctuations in cognitive anxiety. There was a notable increase in cognitive anxiety prior to the cross-country phase in the post-SMIP condition (pre-SMIP CA = 16; post-SMIP CA = 20). Cognitive anxiety was lower for the show-jumping phase post SMIP compared to pre-SMIP.



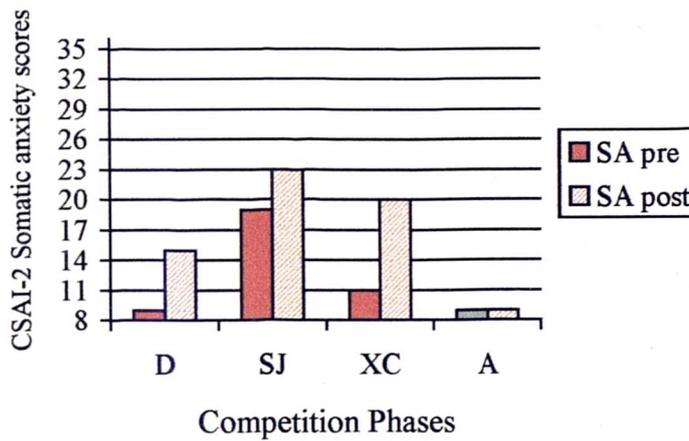
**Figure 7.2.7b:** Intensity scores for CSAI-2 cognitive anxiety (CA) for subject 1 in the competition phases of the horse trial in the pre- and post SMIP conditions (Note: the time axis is not drawn to scale).

Subject 1's somatic anxiety scores increased in the post SMIP in all phases of the competition. There was a notable increase in somatic anxiety 7 days before (pre-SMIP = 10; post-SMIP = 17) and 1 day before (pre-SMIP = 10; post-SMIP = 16) the competition (Figure 7.2.8a). The somatic anxiety on the morning of the event and hence prior to the dressage phase was considerably higher in the post-SMIP than pre-SMIP (pre-SMIP = 9; post-SMIP = 15).

Somatic anxiety was considerably greater post-SMIP than pre-SMIP throughout the competition (Figure 7.2.8b). In particular, somatic anxiety prior to the cross-country phase increased by 9 units on the CSAI-2 scale. Somatic anxiety returned to baseline levels after the competition.

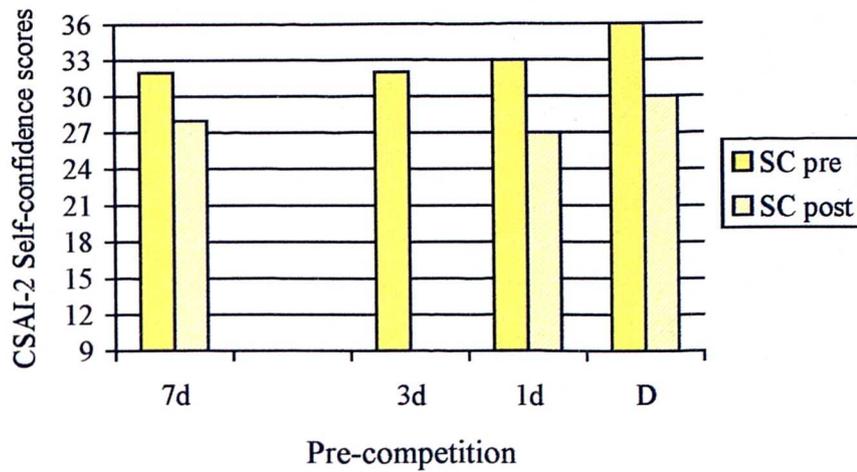


**Figure 7.2.8a:** Intensity scores for CSAI-2 somatic anxiety (SA) for subject 1 in the pre-competition phases, prior to and post SMIP (Note: the time axis is not drawn to scale).

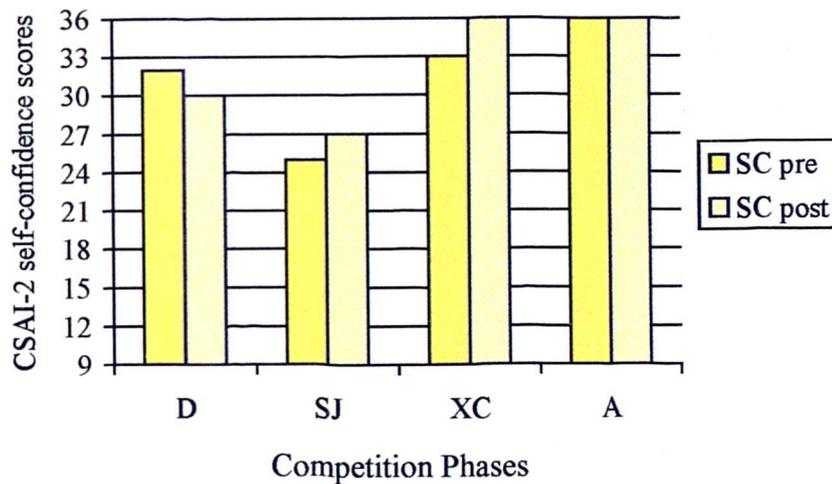


**Figure 7.2.8b:-** Intensity scores for CSAI-2 somatic anxiety (SA) for subject 1 during the competition phases both pre- and post SMIP (Note: the time axis is not drawn to scale).

CSAI-2 self-confidence was lower in the pre-competition phase of the post-SMIP assessment than the pre-SMIP (Figure 7.2.9a). Subject 1 also reported a decrease in self-confidence in the dressage phase after the implementation of the SMIP. In the show-jumping and cross-country phases, however, subject 1 reported an increased level of self-confidence in the post-SMIP competition compared to the pre-SMIP competition (Figure 7.2.9b).



**Figure 7.2.9a:** Intensity scores for CSAI-2 self-confidence (SC) during the pre-competition phase for subject 1 prior to and post SMIP (Note: the time axis is not drawn to scale).



**Figure 7.2.9b:** Intensity scores for CSAI-2 self-confidence (SC) for subject during the competition, both prior to and after the SMIP (Note: the time axis is not drawn to scale).

The MRF scores were similar to the CSAI-2 scores for the post-SMIP and indicated higher cognitive and somatic anxiety and lower self-confidence in the pre-competition

phase (Table 7.2.4). The self-confidence scores for the show-jumping and cross-country increased in the post-SMIP competition and supported the findings of the CSAI-2.

**Table 7.2.4:** MRF scores for subject 1 in the pre- and post-SMIP competitions.

Temporal Patterning Stages	Cognitive anxiety		Somatic anxiety		Self-confidence	
	pre-SMIP	post-SMIP	pre-SMIP	post-SMIP	pre-SMIP	post-SMIP
1 week before	1	4	1	4	1	4
3 days before	1	-	1	-	1	-
1 day before	4	3	4	3	3	3
Dressage	1	4	1	4	1	3
Show-jumping	6	8	6	8	6	* 3
Cross-country	2	2	2	2	2	* 1
After event	1	1	1	1	1	1

**Note:-** \* denotes the increase in self-confidence. The MRF scale ranges from 1 (confident) to 11 (scared), hence the lower the score, the greater the self-confidence reported by the subject.

The CSAI-2 direction scores in the post-SMIP revealed that subject 1 perceived the anxiety and self-confidence as less facilitative to performance in the post SMIP condition than the pre-SMIP condition (Table 7.2.5).

**Table 7.2.5:** The direction scores of the CSAI-2 components for subject 1 prior to and after the SMIP.

Temporal Patterning stages	Cognitive anxiety		Somatic anxiety		Self-confidence	
	pre-SMIP	post-SMIP	pre-SMIP	post-SMIP	pre-SMIP	post-SMIP
7 days before	27	26	27	21	27	26
3 days before	27	-	27	-	27	-
1 day before	27	25	27	23	27	24
Dressage	27	25	27	22	27	22
Show-jumping	27	20	23	11	27	17
Cross-country	27	27	27	27	27	27
After event	27	27	27	27	27	27

In summary, post-SMIP, subject 1 experienced fluctuating cognitive anxiety levels and increased somatic anxiety throughout the competition and lower self-confidence in the

pre-competition stage. In the show-jumping and cross-country phases, subject 1 experienced greater self-confidence levels than prior to the SMIP. Subject 1 maintained a perception of anxiety and self-confidence levels as facilitative to performance, although the direction scores for the post-SMIP condition were not as large as for the pre-SMIP condition.

The score for *perceived readiness* on the PEQ was 43 in the post-SMIP condition. This was an 11% improvement on the score obtained in the pre-SMIP condition. Subject 1 also perceived the external environment as more suitable to her performance in the post-SMIP (*external environment*: pre-SMIP = 14; post-SMIP = 25).

The CDSII results indicated subject 1's increased perception of an internal locus of causality (pre-SMIP = 13; post-SMIP = 27), stability (pre-SMIP = 20; post-SMIP = 26) and personal control (pre-SMIP = 24; post-SMIP = 27) and hence greater feelings of control over her situation and performance in the post SMIP condition. The score for external control also increased post-SMIP (pre-SMIP = 3; post-SMIP = 11).

#### *The horse trials performance*

The horse trials performance comprised actual performance measures, that is, the penalty scores obtained by subject 1 and her perceived success. Both measures were obtained from the competition assessment booklets. The penalty scores for subject 1 in both the pre- and post-SMIP competition are displayed in Table 7.2.6. The scores for the dressage and show-jumping phases were poorer in the post-SMIP condition. The cross-country score and total horse trials score improved post-SMIP by 24 and 16 penalty marks respectively. The position for both the pre-SMIP and post-SMIP competition was 4th place.

**Table 7.2.6:** Actual performance scores for subject 1 during the phases of the horse trial for both pre- and post-SMIP competitions.

Competition	D	SJ	XC	XCT	Score	Position
Pre- SMIP	26	0	0	26	52	4th
Post-SMIP	29	5	0	2	36	4th

**KEY:-** D - Dressage, SJ -Show-jumping, XC - Cross-country, XCT - Cross-country time.

**NOTE:-** All scores in this table are penalty scores. XCT are the time penalties for exceeding the optimum time set for the cross-country course.

The perceived success was evaluated in conjunction with the goals set for each phase of the competition and the actual performance achieved. The goals set for the pre- and post-SMIP competitions are identified in Table 7.2.7 and reflected the progression of difficulty of the goals through goal setting plan incorporated in the SMIP. Table 7.2.7 also incorporates subject 1’s rating of the achievement and evaluation of these goals.

The perceived success in the dressage and show-jumping phases were rated lower in the post-SMIP competition compared to the pre-SMIP competition where subject 1 failed to achieve goals set for that phase in the post-SMIP competition (Table 7.2.6 and 7.2.7). This evidence indicated the decreased performance and perceived success in the dressage and show-jumping after the SMIP. The cross-country goals were achieved in both the pre- and post-SMIP competitions. Perceived success for these results were both rated high.

The perceived success for the total performance in the pre- and post-SMIP competitions were both rated with a score of 4 (*very successful*). The evaluation of each performance by subject 1 indicated the perception of success in more detail. For the pre SMIP competition, subject 1 stated;

“He would have won in good going, he was well ahead before the time penalties but I just cantered him round”

(Pre-study assessment booklet)

In the post-SMIP competition, subject 1 evaluates the pre-competition preparation for the horse trial;

“I was pleased because it was a long drive down ‘A’ roads not motorways. I had been very ill up to the Monday therefore had not ridden since the previous Thursday...and I was quite tired because we had done the dressage times for our competition on the Tuesday”

(Post study assessment booklet)

**Table 7.2.7:** Goals set and evaluation of goal achievement for the pre- and post-SMIP competitions by subject 1.

<b>Phase of horse trial</b>	<b>Goal set</b>	<b>Rating of goal achievement</b>	<b>Perceived success</b>
<b>Dressage</b> Pre- SMIP	< 30 penalties	4 - very much so	“My horse was excelling himself from the start”
Post-SMIP	< 25 penalties	3 - moderately so	“The horse was on target, rider had to much to do prior to the competition, therefore failed to memorise test properly and made two mistakes, otherwise, would have reached intended goal”
<b>Show-jumping</b> Pre- SMIP	Clear	4 - very much so	“This is my worst phase, not the horse’s. I came through well, the horse was brilliant”
Post-SMIP	5 penalties	3 - moderately so	“The horse was not sufficiently between hand and leg and I had to be strict with myself and pull all the stops out to get round. But we did it”
<b>Cross-country</b> Pre- SMIP	Clear, no time penalties, but with horses condition in mind at all times	4 - very much so	“The ground was so bad it was impossible to ask your horse to try to reach the time which was too tight for extremely good ground”
Post-SMIP	Clear, as close to time as possible	4 - very much so	“Clear with 2 time penalties, it was a long course with an optimum time of 5 minutes 12 seconds”

### *Evaluation of SMIP*

In the post-SMIP interview six meaning units were categorised into Rider factors and referred to subject 1's evaluation of the SMIP. All these meaning units were positive and referred to the techniques implemented in the SMIP.

*“(goal setting)...it was very relevant because as I say it made a plan and especially when you've got so much to do as well, sometimes you try and take a short cut but you can't if you have got a plan to work to, you don't short cut. It just made me, I just had to do it”*

p.12, A73

Subject 1 also referred to the cognitive restructuring and positive self-talk which formed part of the SMIP. In particular she referred to the need for past experience to benefit the positive self-talk process.

*“(cognitive restructuring and positive self-talk) They worked out because it primes you ...to go back and think what you have done and then you know in your mind that it can be done again...and then when you start to back off...then it comes back and you say 'hang on I can do this', because you know you have done it before”*

p.13, A76

Subject 1 emphasised the benefit of the pre-phase relaxation tape prior to each phase of the horse trial. She referred to its positive effect on her cognitive worry associated with the competition.

*“(pre-phase relaxation tape) That helped me a bit...because it gives me time to think 'I can do this'. It relaxes me but not the whole of my body. My body is still tight. My mind is better”*

p.14, A87

### *7.2.4 Discussion*

#### *The psychological constructs*

The constructs related to physical aspects of riding were directly targeted by the goal setting technique in the SMIP. It was probable that the increased self-rating of these constructs was due to the progress subject 1 made through the goal setting

programme. Specifically, subject 1 identified goals to increase her *accuracy* and *awareness of speed* through show-jumping and cross-country training. Subject 1 identified in the post study interview that the goal setting plan was beneficial to her training (see *Evaluation of SMIP*, later in this section). The progress in these areas would increase her self-rating towards her ideal assessment.

Increases in several psychological constructs occurred, in particular, *confidence* (increased by 1 unit), *dealing with criticism* (1 unit), *ability to relax* (2 units) and *adaptable* (1 unit). These constructs were targeted by the SMIP techniques and the cognitive restructuring, positive self-talk and relaxation techniques may have produced the positive changes in these constructs. Subject 1 identified feeling more relaxed and positive on the competition day. *Being tough, patience and good memory* were not directly targeted by the SMIP but their increase may have been due to a secondary effect of the SMIP. It was not clear why *dealing with mistakes* was reduced in the post-SMIP performance profile.

The post-SMIP interview analysis revealed changes in subject 1's psychological skills. In comparison to the pre-study interview analysis, there was evidence to suggest that subject 1 reported fewer negative statements and employed considerably more active coping skills throughout the horse trial and specifically for the show-jumping phase which was specifically targeted by the SMIP. These results compared to Crocker et al. (1988) who reported fewer negative thoughts from a group of volleyball players who had received SMT.

Prior to the competition, subject 1 experienced illness and preparation problems which caused her decreased perception of event readiness. Her lack of preparation for this phase was indicated in her evaluation of the goal setting programme. She was not able to complete the programme for the show-jumping training prior to the post-SMIP competition.

*“(goal setting) It did make me feel better. It showed up the parts that I had been able to do, it paid off...the one I hadn't managed to do well was the show-jumping...”*

p.13, A75

The horse also behaved uncharacteristically during the show-jumping, however, subject 1 effectively completed the phase and actively employed coping skills and positive self-talk. The SMIP techniques were also applied to the cross-country phase by subject 1 and indicated her ability to recognise problems and utilise the techniques as and when appropriate. The post-study interview analysis provided evidence to support the successful achievement of aims 1, 2 and 3 in this study.

The CSAI-2 results revealed fluctuations in cognitive anxiety throughout the post-SMIP horse trial. This was consistent with Martens et al. (1990) who emphasised that cognitive anxiety was related to the subjects' performance expectations and were hence, frequently found to change throughout a competition. The fluctuation in cognitive anxiety is particularly pertinent in this case as the horse trial comprises three phases. Subject 1 obtained both knowledge of performance and knowledge of results after each phase of the horse trial. This feedback may have affected her performance expectations for the next phase and for the entire competition. McAuley (1985) indicated that performance was the most significant predictor of cognitive anxiety levels for the next competition. Subject 1 did not achieve her target for the show-jumping phase. As a result, subject 1 may have placed extra pressure on herself in the cross-country phase to maintain her overall target for the competition which could account for the increased cognitive anxiety in the post SMIP cross-country phase in comparison to the results for the pre-SMIP condition.

Possible explanations for the increase in somatic anxiety levels relate to, the standard of the competition, the goals set prior to the competition and the subject's perceived readiness for competition. Firstly, the pre-SMIP competition was a Pre-Novice competition whereas the post-SMIP competition was a higher standard Novice competition. Secondly, the goals set by subject 1 prior to the post-SMIP were more difficult than those set prior to the SMIP. This was expected as subject 1 was following a goal setting plan specifically designed to gradually increase the level of difficulty of the goals to progress towards her long term goal. However, the increased difficulty of the set goals, in conjunction with her low level of perceived readiness caused by her illness and lack of preparation, may have accounted for the increased

levels of cognitive and somatic anxiety in the post SMIP competition assessment (Figure 7.2.8a).

The literature suggests that somatic anxiety intensity is a conditioned response to competition stimuli (McAuley, 1985; Martens et al., 1990) and hence, remains low prior to the competition and increases dramatically and immediately on the day of the competition. However, the results for the temporal patterning of somatic anxiety after the SMIP revealed that somatic anxiety was high prior to the competition (Figure 7.2.8a) and then increased further during the competition (Figure 7.2.8b). Only after the completion of the horse trial did somatic anxiety return to baseline levels. It was not clear as to the cause of the increased somatic anxiety levels in the week prior to the competition (Figure 7.2.8a). It was possible that these changes were due to the normal fluctuations in somatic anxiety for subject 1. Further assessment of subject 1's somatic anxiety is needed to investigate whether this result was related to the post-SMIP competition or some other factor.

The reduction in pre-competition self-confidence was possibly related to the lack of preparation reported by subject 1 prior to this competition. Jones et al. (1990) reported that perceived readiness was a significant predictor of self-confidence and cognitive anxiety. Subject 1's illness caused her to miss both dressage and show-jumping training sessions in the week prior to the competition. The interview analysis revealed her perception of a lack of readiness for the post-SMIP competition.

The substantial increase in self-confidence during the show-jumping and cross-country phases may have been related to the employment of coping techniques. Subject 1 reported using cognitive restructuring and positive self-talk prior to these phases (see earlier in this section) and also reported the effectiveness of these techniques (see *Evaluation of the SMIP*, later in this section). The increased self-confidence for the show-jumping phase supported the achievement of the third aim in this case study.

The reduction in the CSAI-2 direction scores may have been caused by the increase in levels of anxiety and decrease in levels of self-confidence experienced in the

competition after the SMIP. Jones et al. (1993) found that good performers perceived CSAI-2 components as more facilitative to performance than poor performers. The results for the directions scores for subject 1 after the SMIP were potentially detrimental to performance. However, subject 1 combated these perceptions and successfully employed coping skills in the show-jumping and cross-country phases. Consequently, there is evidence to support the achievement of the first aim of the present case study. The performance results are analysed and discussed in the following section.

*“(show-jumping) ...I didn’t panic and think ‘This is going to be a problem’...”*

p.8, A44.

The PEQ scores revealed that subject 1 perceived she was more prepared for the horse trial in the post SMIP condition than in the pre-SMIP condition. This however appeared to contradict the information regarding her lack of perceived readiness from the interview analysis. The items comprising the perceived readiness factor on the PEQ relate to training in the four weeks prior to the competition, performances in the last four weeks and the rider’s perception of how well she is riding at the moment as well as items relating to her physical and mental readiness. It was possible that the scores for the items relating to training and competing overrode the scores for the physical and mental readiness in relation to perceived readiness. Further analysis of the items in this factor need to be assessed in terms of their relative importance for the upcoming competition.

The CDSII results revealed subject 1’s increased perception of self control but also external control. A possible explanation for this increased feeling of external control may be the fact that subject 1 missed training sessions due to her illness in the week before the horse trial. She may have perceived the illness as outside of her control, but contributing to her performance at the competition. Certainly, the major reason for the result was reported by subject 1 as determination and a good horse which appeared to coincide with the increases in the other components on the CDSII.

### *The horse trials performance*

The reduction in the dressage performance was related to subject 1's errors during the test. The errors resulted from a lack of preparation and failure to prepare the test thoroughly in her mind prior to competing. It is possible that the SMIP did not address the practical aspects of the competition such as; the preparation time between phases, the location and the facilities available. In this case, subject 1 reported a lack of time prior to the dressage which resulted in her failure to ensure the test was committed to memory.

*“(dressage test) I didn't really have time to consolidate that test in my mind, so therefore it was a rider problem, not a horse problem...he actually did a nice test...so it wasn't his problem it was mine”*

Post Study interview (p.4, A22-24)

It was possible that the time urgency factor outweighed the importance of the SMIP techniques and resulted in subject 1 failing to complete the techniques and the pre-competition checklist. Future usage of SMIP's must thoroughly take into account the practicality of the techniques in relation to the requirements of the sport.

The explanation for the poorer performance and lack of goal achievement in the show-jumping phase after the SMIP was related to subject 1's perceived lack of readiness associated with missed training sessions due to illness (see *Psychological constructs*, p.238). Although subject 1's goal was not achieved, she perceived the show-jumping performance to be moderately successful. The evidence provided in the previous section, *'The psychological constructs'* and the perceived success from the post study assessment booklet indicated that subject 1 employed coping skills (cognitive restructuring and positive self-talk) to counteract the negative effect of her perceived lack of readiness and the horses uncharacteristic behaviour during this phase.

*“(relaxation techniques) I used them on the day...they helped before the show-jumping”*

Post study interview (p.4, A21)

This evidence supported the achievement of aims 1 and 3 in this case study. Subject 1 was able to utilise SMIP where appropriate and when things went wrong, also she maintained a positive mental state for the show-jumping. The maintenance of a positive

perception of state anxiety was in line with subject 1's perception of anxiety as facilitative to show-jumping performance prior to the SMIP (see Table 7.2.5). Maynard et al. (1995) emphasised the need to consider the subject's perception of state anxiety levels when designing stress management programmes. Reduction of anxiety levels which are perceived as facilitative could be detrimental to the subject's performance.

The largest improvement was in the cross-country phase of the horse trial. Possible factors explaining the increased performance were firstly, the improvement in physical riding factors on the performance profile, namely; *awareness of speed* and *accuracy*. Mortimer (1993) emphasised the need for the event rider to have a good understanding of pace judgment and awareness of speed. He suggested that awareness of speed could be developed through interval training for the cross-country phase. These factors were targeted by the SMIP through the goal setting programme which incorporated interval training for the cross-country. Goal specificity and the use of sub-goals has been found to increase performance in both organisational and sporting contexts (Jackson & Zedeck, 1982; Hall & Byrne, 1988). The results for the cross-country phase in this case provided initial support the use of specific short, intermediate and long term goals in the sport of horse trials.

Secondly, the employment of relaxation techniques and positive self-talk from the SMIP reduced the negative effect of the high state anxiety levels prior to this phase (see Figure 7.2.7b). As with the show-jumping phase, subject 1 was able to utilise SMIP techniques to improve her psychological state for performance.

“I was quite wound up really and I knew I could do the cross-country and I knew I needed to get a clear on that jump...there weren't many clear jumps, so I wasn't really impressed, so I then went and listened to the tape and did feel better”

Post study interview (p.14, A81)

Subject 1's evaluated the total performance at both the pre and post SMIP competitions as very successful. The potential for a poorer performance than achieved

in the post SMIP competition was great when considering the lack of preparation, subject 1's illness and the uncharacteristic behaviour during the show-jumping phase. However, the evidence presented indicated that subject 1 was able to employ active coping skills to reduce the potential poor performance. These findings again provided initial support for the use of goal setting, cognitive restructuring, positive self-talk and relaxation techniques as part of a multi-modal stress management programme for horse trials riders. The results were in accordance with findings of other stress management programme used in sport settings (Mace et al., 1986; Crocker et al., 1988; Maynard & Cotton, 1993).

#### *Evaluation of the SMIP*

Subject 1 considered the goal setting programme as beneficial to her training schedule and increased her positive perception regarding her training for competition. The positive effect of the goal setting programme has already been discussed in relation to the cross-country training and awareness of speed. For the show-jumping phase, subject 1 was unable to complete the programme due to illness. This accounted for her lack of perceived readiness for that phase and again indicated the benefits of the goal setting programme.

The cognitive restructuring and positive self-talk were also perceived as beneficial to her performance in the post SMIP competition. Subject 1 indicated that there was a need for past experience to enable the full benefits of the cognitive restructuring and positive self-talk. This highlighted an important aspect of the technique which requires a subject to replace negative thoughts with positive ones. This process may be much easier when the subject has past experience of success in the task under consideration. Implications for Novice riders include the possibility of using video footage of elite performers to provide a reference to use in replace of the past experience on new tasks.

The pre-phase relaxation tape emphasised the reduction of cognitive worry for subject 1 and the rehearsal of positive self statements prior to each phase of the horse trial. Subject 1's evaluation provided evidence to indicate that the pre-phase tape reduced

cognitive worry and did not affect physiological arousal or somatic anxiety. It was acknowledged that riders need to maintain physiological arousal prior to competing. However, based on the pre-study baseline assessment, it was evident that subject 1 required a cognitive strategy to combat the negative effects of cognitive worry. This was achieved for subject 1 in the post SMIP competition.

#### *7.2.5 Conclusion*

The results indicated that subject 1

- maintained a positive mental state in the post SMIP competition, in particular the show-jumping phase
- utilised the SMIP techniques where appropriate, specifically in the show-jumping phase and the cross-country phase when things started to go wrong
- developed an increased awareness of her psychological state and experienced an improvement in performance in the show-jumping and cross-country phases.
- reported her perception of the SMIP as effective and beneficial to her psychological state and performance.

The results provided initial support for the inclusion of individualised stress management intervention programmes for horse trials riders. Further research into their effectiveness on a larger scale is required. The results also indicated the need to effectively assess the practicality of aspects of the SMIP in real life competition. This should also be addressed in future research.

## 7.3 Case Study 2

### 7.3.1 Introduction

Case study 2 formed the second subject in the three collective case studies for the implementation and evaluation of the individualised SMIP. The intervention programme followed the generic design, content and application procedures explained in section 7.1. The application of the intervention programme followed the same format as case study 1, however, the case study presentation here is summarised to indicate the main findings. Throughout sections 7.3 and 7.5, case study 2 will be referred to as 'subject 2'. The aims were developed to address the targets identified by subject 2 and the areas for improvement identified from the baseline assessment. The aims of the study were to;

- 1) provide subject 2 with practical knowledge of goal setting, cognitive restructuring, positive self-talk and relaxation techniques, which could be utilised by subject 2 in equestrian sports as required.
- 2) enable subject 2 to control levels of competitive state anxiety throughout the horse trial, particularly the dressage and show-jumping phases.
- 3) develop a positive mental state for subject 2's performance in the horse trials, particularly the dressage and show-jumping phases.

### 7.3.2 Subject Information

Subject 2 was a 21 year old female who was an experienced rider. She competed for Britain in the Junior European Championships, however, she felt that she had not yet proved herself at a senior level. She regarded the show-jumping phase as her weakest phase and refers to problems with accuracy. Subject 2 reported that she was generally relaxed and very competitive reports that she always wanted to do her best and to win. Subject 2 competed on a 16 year old, 16.0hh brown thoroughbred gelding. The horse reached BHS Advanced level status. Subject 2 informed the researcher that the horse was extremely capable in the jumping phases yet was poor in the dressage phase as a result of his ability. She referred to the horse's unpredictability and reported that he quite often became very excited which exacerbated the problems already occurring in the dressage phase causing her to become tense and nervous.

### *Measures*

See Section 7.1.2 for detailed information of the measures used in this case study.

### *Baseline Assessment*

The performance profile constructs primarily targeted by the SMIP included, *positive attitude, dealing with mistakes, adaptable, motivation, confidence and concentration*. The semi-structured interview analysis, CSAI-2 and MRF results indicated an increase in cognitive and somatic anxiety and a decrease in self-confidence in the week prior to the competition and prior to the show-jumping phase for subject 2. She was more negative about the show-jumping in comparison to the other phases. The direction scores for the CSAI-2 indicated that subject 2 perceived her levels of somatic anxiety as debilitating to the dressage and cross-country phases, thus supporting the information in the *Subject Information* section. Cognitive anxiety was perceived by subject 2 as less facilitative to performance in the show-jumping and the cross-country. The evidence from the baseline assessment indicated the need for anxiety reduction for the dressage and show-jumping phases. A further aim, supported by the interview analysis was to develop self-confidence for the show-jumping phase. The SMIP techniques would also benefit subject 2's preparation in the week before the horse trial.

### *Content of the SMIP*

The SMIP techniques were aimed at all phases of the horse trial and particularly the show-jumping phase (Table 7.3.1).

### *Intervention*

The SMIP sessions were held at subject 2's house and lasted between 1 and 1 1/2 hours. Subject 2 did not compete until 7 weeks after the end of the SMIP technique sessions. due to injury. The time delay between the end of the SMIP and the competition assessment was taken into consideration in the post-SMIP analysis.

**Table 7.3.1:** Content of the SMIP for subject 2.

Phase	Goal Setting	Cognitive Restructuring	Positive Self-Talk	Relaxation
Dressage	increase awareness of preparation and knowledge of progression through training	maintain a positive attitude during warm-up, test, after mistakes; develop positive attitude in relation to horse's ability	positive affirmations of horse's and riders ability	pre-phase relaxation to reduce tension and control thoughts
Show-jumping	increase awareness of perceived readiness; show progression of training	develop positive attitude of own ability; maintain positive attitude after mistakes occur	positive affirmations of rider's ability, accuracy	pre-phase relaxation to control thoughts; 5-breath technique to gain control after mistake
Cross-country	increase awareness of perceived readiness in ability, technique and fitness	development of positive attitude for warm-up and during round	positive affirmations regarding ability and horse's ability	pre-phase relaxation to control thoughts; 5-breath technique

**Note:-** The information presented in this table is in a condensed format from the information presented to the subject.

### *Post intervention*

Data were gathered via the post study performance profile, post study assessment booklet and post study interview (see Section 7.1.4). Competition results were obtained via the post study assessment booklet.

### *Data Analysis*

The pre-SMIP and post-SMIP data were compared to assess the changes in subject 2's anxiety levels, causes of anxiety, attributions and performance between these time points and incorporated both quantitative and qualitative data analysis.

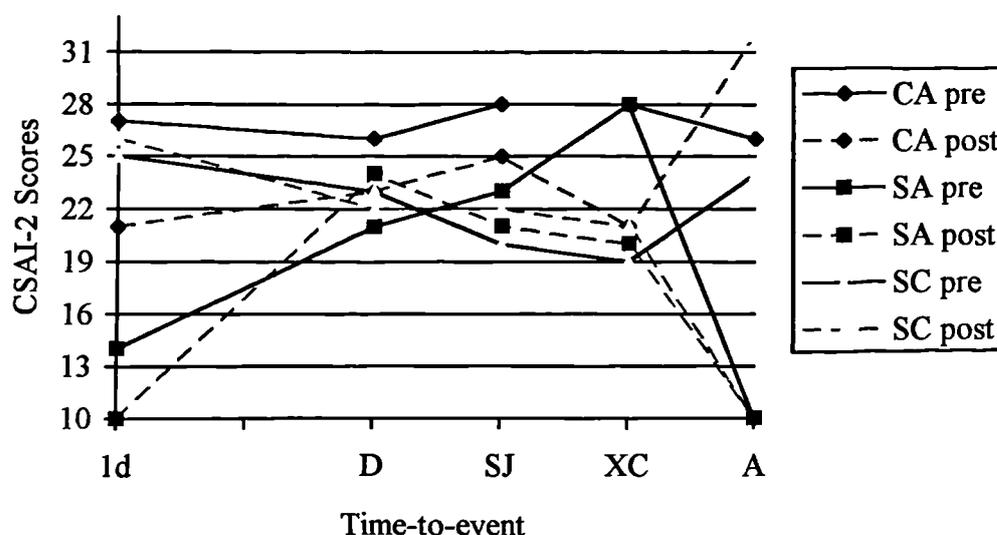
### *7.3.3 Results*

#### *The psychological constructs*

The psychological constructs directly targeted by the SMIP increased in the post SMIP condition; *positive attitude* (2 units), *dealing with mistakes* (3 units), *adaptable* (2 units), *motivation* (2 units), and *confidence* (1 unit). In the post-SMIP semi-structured interview analysis, the percentage of negative meaning units referring to the

horse trial was still high (38%), however this figure had reduced from the pre-SMIP interview analysis (59%). The positive meaning units encompassed statements regarding self-confidence, concentration, competition strategies, expectations, evaluation of performance and evaluation of the intervention. As with the pre-SMIP interview analysis, subject 2 reported the problems that occurred in the dressage phase in the post-SMIP were due to her horse's ability and behaviour. Subject 2 again reported her unsuccessful attempts prior to the phase to calm her horse down and emphasised her disappointment with the horse in this phase and her lack of effect on the outcome of the dressage performance.

The CSAI-2 results in the post-SMIP condition for 7 days and 3 days before the competition were not recorded. The comparison between pre- and post SMIP data will be presented on the same graph incorporating both pre-competition and competition phases and will thus comprise a different format from case study 1.



**Figure 7.3.1:** Intensity scores for the CSAI-2 components for subject 2 prior to and after the SMIP (Note: the time axis is not drawn to scale).

Figure 7.3.1 showed a decrease in cognitive and somatic anxiety and an increase in self-confidence one day before and throughout the competition phases, particularly the show-jumping phase, in the post-SMIP condition. The reduced cognitive anxiety levels were perceived as more facilitative to performance for the dressage and show-jumping

phases in the post-SMIP condition (see Table 7.3.2). For the dressage phase, somatic anxiety was reported as higher in the post SMIP condition by subject 2 (Figure 7.3.1). For the show-jumping phase, somatic anxiety was slightly reduced from the pre- SMIP to the post-SMIP competition and greatly reduced for the cross-country phase. The levels of somatic anxiety were perceived as facilitative to all phases of the horse trial in the SMIP condition where previously they had been perceived as debilitating to the dressage and cross-country phases (Table 7.3.2). The self-confidence prior to the dressage phase was slightly reduced in the post-SMIP condition (Figure 7.3.1) and increased for the show-jumping phase. The MRF scores partially supported the CSAI-2 intensity scores in the post-SMIP, however, the scores did not indicate the increase in somatic anxiety and decrease in self-confidence prior to the dressage phase as observed in the CSAI-2 scores. A substantial increase of 20% in perceived readiness (36 to 48 units) was reported by subject 2 in the post-SMIP condition via the PEQ questionnaire.

**Table 7.3.2:** The direction scores of the CSAI-2 components for subject 2 prior to and after the SMIP.

Temporal Patterning stages	Cognitive anxiety		Somatic anxiety		Self-confidence	
	pre-SMIP	post-SMIP	pre-SMIP	post-SMIP	pre-SMIP	post-SMIP
1 day before	2	3	4	14	6	15
Dressage	5	7	-1	8	6	9
Show-jumping	3	10	0	12	7	13
Cross-country	3	3	-1	10	7	12
After event	-	12	-	4	-	17

NOTE:- Data was not obtained for after the event in the pre-SMIP condition.

#### *The horse trials performance*

The actual performance results indicated the increased performance in all aspects of the horse trial except the dressage phase (Table 7.3.3). For the dressage phase, subject 2's score deteriorated from 29 penalties to 40 penalties in the post-SMIP competition. However, due to the lack of penalties in the other phase, subject 2 achieved a 5th place in the post-SMIP competition.

**Table 7.3.3:** Actual performance scores for subject 2 during the phases of the horse trial for both the pre- and post-SMIP competitions.

Competition	D	SJ	XC	XCT	Score	Placing
Pre-SMIP	29	10	20	19	79	-
Post-SMIP	40	0	0	12	52	5th

KEY:- as for Table 7.2.6, Section 7.2.

The analysis of perceived success ratings indicated that subject 2 was disappointed with her dressage performance in the post SMIP condition.

“...OK test, same standard as usual but no real improvements”

(Post study assessment booklet)

Performance, perceived success and rating of goal achievement improved in the post-SMIP for the show-jumping and cross-country phases. Subject 2’s evaluation of the horse trials performance as a whole indicated an improved rating of success in the post-SMIP.

#### *Evaluation of the SMIP*

Subject 2 reported that the intervention programme increased her awareness of her psychological state for competition and reinforced strategies she already used for competition. Subject 2 also reported how she was not completely convinced about the effectiveness of some of the techniques in the SMIP. She indicated that in some cases she was not sure whether the techniques would really work and the problem was due to the horse disrupting the effect of the SMIP techniques.

“...it can make you think more positively...make you ride better...calm you down or hype you up...but it’s still the horse, because he’s not completely under your control, which messes it all up”

Post study interview (p.18, J114)

Subject 2 reported that she would use the SMIP techniques again as they reinforced many of the strategies she already employed. She preferred the pre-phase relaxation

incorporating the visualisation of her best performance rather than the deep relaxation session and would thus omit this from her future mental preparation schedule.

#### *7.3.4 Discussion*

##### *The psychological constructs*

Subject 2 experienced a reduction in anxiety, an increase in self-confidence and was significantly more positive with regards to the horse trial. The performance profile results indicated improvements in the self-rating of *positive attitude, dealing with mistakes, motivation, confidence* and *adaptable*. These constructs were directly targeted by the SMIP techniques, goal setting, cognitive restructuring and positive self-talk. It was possible that the SMIP techniques were responsible for these improvements. This was supported by the evaluation of the intervention by subject 2 in the post-SMIP interview. Doyle and Parfitt (1995) found initial support for the use of performance profiles by athletes and coaches and its validity. Further research needs to incorporate the validity and reliability of the performance profile as a measure of improvement in applied individual intervention settings.

Subject 2 reported fewer negative statements and an increase in self-confidence in relation to the horse trials preparation and performance. This was supported by the CSAI-2 intensity and direction scores. The reduced negative statements may have been the result of the cognitive restructuring and positive self-talk strategies employed by subject 2 following the intervention programme and supports the previous use of these techniques in the literature (Crocker et al., 1988).

The SMIP aimed to generate a positive mental state for the dressage and show-jumping phases. The evidence indicated that this was achieved for the show-jumping phase but not for the dressage phase. Subject 2 perceived herself to be more prepared for the post-SMIP horse trial than for the pre-SMIP horse trial as identified from the PEQ scores. This increase was possibly related to the increased confidence and positive attitude shown on the performance profile. The increased levels of self-confidence may also have been generated by the cognitive restructuring and positive self-talk techniques in the post-SMIP condition. Jones et al. (1993) concluded that

self-confidence intensity was strongly correlated with cognitive and somatic anxiety direction. The increased self-confidence may also be partly responsible for the increased perception of cognitive and somatic anxiety as facilitative to performance. Prior to the dressage phase, subject 2 reported a decreased self-confidence level. This was explained by her perceived lack of effect on the horse's performance in this phase.

The evidence from the CSAI-2 results supported the achievement of aim 2 for the phases of the horse trial except the somatic anxiety prior to the dressage. The increase in somatic anxiety as measured by the CSAI-2 suggested that the SMIP did not sufficiently target the somatic anxiety system. It was envisaged that the somatic anxiety system would be targeted through cognitive techniques (Maynard and Cotton, 1993). It also supported the achievement of aim 3 for the show-jumping and cross-country phases but not the dressage phase. More intervention work would be needed to produce positive changes in subject 2's perception of this phase. The MRF scores provided partial support for the CSAI-2 scores obtained in the post-SMIP competition. It is necessary to establish the validity and reliability of the MRF in a horse trials context.

#### *The horse trials performance*

Despite the poorer performance in the dressage phase, the overall penalty score and placing improved in the post-SMIP competition. The probable causes for the improved performance were the reduction in anxiety levels, increase in self-confidence and the increased perception of these levels as facilitative to performance. These results supported the achievement of aims 2 and 3 for this case study in specific areas of the horse trial.

The poor performance in the dressage phase was reported by subject 2 as relating to her horse's ability and behaviour in this phase. This was evidenced by the post-SMIP interview analysis. It was possible that subject 2's interpretation of the situation in the dressage overrode the positive effects of the SMIP techniques as she reported that the SMIP techniques were successful in other areas of the horse trial. Subject 2 experienced an increase in somatic anxiety which she perceived as slightly facilitative

to performance, however, she also reported that once things had started to go wrong in the dressage they did not improve. Subject 2 may be experiencing the negative effects of the negative performance cycle which incorporates the transfer of tension between the horse and rider and vice versa (see Section 3.3.2).

#### *Evaluation of the SMIP*

In the evaluation of the SMIP, subject 2 reported that the techniques were beneficial to her preparation for competition in both a practical goal setting context and in terms of mental preparation for competition. This was evidenced by the improvements in the psychological constructs and performance previously seen.

However, subject 2 indicated several reservations about the effectiveness of the techniques. It was possible that the SMIP techniques were not sufficiently learned and thus were not automatic in competition. The researcher would need to ensure subjects were practising the techniques in increasingly stressful situations. As subject 2 is an elite horse trials rider the SMIP techniques such as positive self-talk may be an innate characteristic which has enabled her to reach this level of competition. She reported that she 'knew' her strengths and weaknesses. Highlighting these through a very active technique (positive self-talk) may create a falseness in subject 2's belief of them. Subject 2 reported that visualisation of her best performance would be extremely useful prior to a competition. Future intervention work may take the form of imagery based techniques for elite riders.

#### *7.3.5 Conclusion*

The results indicated that subject 2;

- experienced a reduction in anxiety levels and an increase in self-confidence levels in the post-SMIP condition and maintenance of a positive perception of these levels
- utilised SMIP techniques throughout the phases of the horse trial
- was not successful in combating the problems in the dressage phase with the SMIP techniques

The evidence supported the achievement of aims 1, 2 and 3 for specific phases of the horse trial in this case study. Future work would need to address the problems relating to muscular tension in the dressage phase more closely. It was suggested that subject 2 would benefit from imagery based and visualisation techniques in future work.

## 7.4 Case Study 3

### 7.4.1 Introduction

Case study 3 was the third subject of the collective case studies. The SMIP followed the generic design, content and application procedures identified in Section 7.1. The presentation of this case study is summarised in comparison to case study 1 (Section 7.2). Throughout sections 7.4 and 7.5, the subject in this case study will be referred to as 'subject 3'. The aims were developed to address the targets identified by subject 3 during discussions with the researcher, and the areas for improvement identified from the baseline assessment. The aims of the study were;

- 1) to provide subject 3 with practical knowledge of goal setting, cognitive restructuring, positive self-talk and relaxation techniques, which could be utilised by subject 3 in equestrian sports as required.
- 2) to enable subject 3 to control levels of competitive state anxiety throughout all phases of the horse trial
- 3) to develop a positive mental state for subject 3's performance in all phases of the horse trial.

### 7.4.2 Subject Information

Subject 3 was a 36 year old male. He was relatively inexperienced and had competed in BHS Pre-Novice and Novice horse trials for just one season and reported that there was a lot of new information which he sometimes found difficult to deal with. Subject 3 also emphasised other important commitments; his family and work commitments and consequently indicated that sometimes he was unable to devote sufficient time to the horse trials. Subject 3 competed on a 6 year old, 16.2hh grey gelding. He informed the researcher that the horse to be very young, inexperienced and lacked concentration in all areas of the horse trial having only competed for one season. Subject 3 reported that the horse's behaviour during competition was very excitable which caused problems for subject 3 at competition.

### *Measures*

See Section 7.1.2 for detailed information of the measures used in this case study.

### *Baseline Assessment*

The performance profile constructs primarily targeted by the SMIP included; *confidence, concentration, ability to recover* and *adaptability*. The SAS scores indicated that subject 2 would exhibit a high state cognitive anxiety reaction in competition. This was supported by the interview analysis and CSAI-2 scores. Specifically, the baseline assessment indicated very high levels of cognitive anxiety which was experienced as debilitating to performance by subject 3 throughout the pre-competition and competition period. Subject 2 reported high levels of somatic anxiety during the competition and low levels of self-confidence throughout the competition period. Subject 3's self-confidence was very low (CSAI-2 SC score = 16) prior to the cross-country phase and this was perceived as debilitating to performance. The cause of the competitive state anxiety levels related to subject 3's lack of competition experience. From the baseline assessment, the aim of the SMIP for subject 3, was to reduce anxiety levels, increase self-confidence levels and to develop a more positive perception of psychological state in all areas of the horse trial particularly the cross-country phase.

### *Content of the SMIP*

The SMIP techniques were aimed at all phases of the horse trial and particularly the cross-country phase for subject 3 (Table 7.4.1).

### *Intervention*

The 10 sessions in the SMIP lasted between 1 and 1<sup>1</sup>/<sub>2</sub> hours and were conducted each week at subject 3's house. Due to illness, subject 3 incurred a longer time lag between the second and third SMIP session. This was taken into account during the analysis of results for subject 3.

**Table 7.4.1:-** Content of the SMIP for subject 3.

<b>Phase</b>	<b>Goal Setting</b>	<b>Cognitive Restructuring</b>	<b>Positive Self-talk</b>	<b>Relaxation</b>
Whole event	increase awareness of preparation and perceived readiness; maintain motivation	improve perceptions of competition and analysis of performance	develop a positive attitude regarding training, ability, competitiveness and courage; utilise prior to and during each phase	develop deep relaxation to use in week prior to horse trial; develop pre-phase techniques to reduce anxiety levels
Dressage	increase perceived readiness of dressage technique, horse's ability, progress; gain experience through training and competition	develop positive thoughts prior to dressage and during warm up and test when mistakes occur	develop positive affirmations regarding knowledge of preparation, confidence, competitiveness and technique	develop pre-phase technique to utilise prior to competing; develop 5 -breath technique to reduce anxiety and gain control during competition when mistakes occur
Show-jumping	increase perceived readiness; observe progress through training and competition; monitor horse's ability	develop positive thoughts prior to and during show-jumping round	develop positive affirmations regarding knowledge of preparation, confidence, competitiveness and technique	develop pre-phase technique to utilise prior to competing; develop 5 -breath technique to reduce anxiety and gain control during competition when mistake occurs
Cross-country	increase perceived readiness; boost confidence through knowledge of preparation, training, and horse's fitness	develop positive perception of readiness, ability of self and of horse; develop positive thoughts after mistakes	develop positive affirmations regarding knowledge of preparation, confidence, competitiveness and technique	develop pre-phase technique to utilise prior to competing; develop 5 -breath technique to reduce anxiety and gain control during competition when mistake occurs

**Note:-** The information presented in this table is in a condensed format from the information presented to the subject.

### *Post Intervention*

The post study measurements comprised the performance profile, post-study assessment booklet and semi-structured interview. The post-study interview was conducted one week after the post-study competition assessment. The interview was analysed using the qualitative interview analysis method, explained in section 7.1.4.

### *Data analysis*

The pre- and post-SMIP data were analysed to assess the effectiveness of the SMIP for subject 3. The post-SMIP analysis incorporated subject 3's evaluation of the SMIP. Both qualitative and quantitative data analysis was undertaken.

#### *7.4.3 Results*

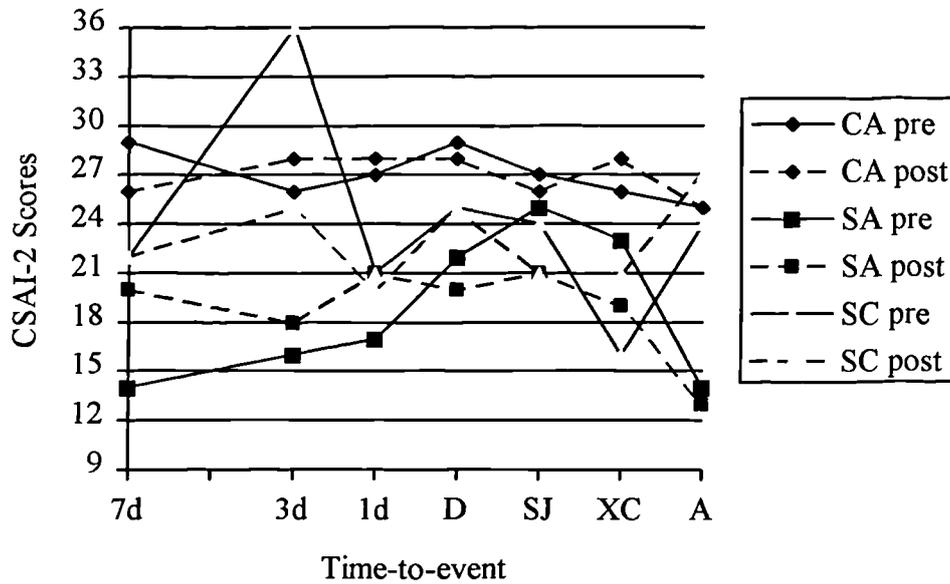
The results were analysed in terms of the psychological constructs, horse trials performance and the evaluation of the SMIP.

#### *The psychological constructs*

Three of the performance profile constructs targeted by the SMIP increased in the post-SMIP; *confidence* (2 units), *ability to recover* (1 unit) and *adaptability* (3 units). The post-SMIP interview analysis identified that subject 3 had a much more positive attitude towards the horse trial. Specifically, in the first order factor, *Rider factors*, 57% of the meaning units were positive and referred to all phases of the horse trial. This is in contrast to the pre-SMIP interview analysis which identified 53% of meaning units in this category as negative. Subject 3 reported an improvement in his ability to deal with mistakes and recover when problems arose during the competition. However, in the post-SMIP show-jumping phase, subject 3 reported experiencing too much relaxation which resulted in a lack of aggression needed for that phase.

The CSAI-2 scores were compared between the pre- and post-SMIP competitions (Figure 7.4 1). Cognitive anxiety increased in the pre-competition period, decreased prior to the dressage and show-jumping and was increased prior to the cross-country

in the post-SMIP condition. These levels of cognitive anxiety were perceived as debilitating to performance in both the pre- and post-SMIP condition (Table 7.4.2). Somatic anxiety was considerably reduced for the phases of the horse trial in the post-SMIP condition.



**Figure 7.4.1:** Intensity scores for the CSAI-2 components for subject 3 prior to and after the SMIP (Note: the time axis is not drawn to scale).

In the post-SMIP, self-confidence levels were reduced for the show-jumping which was perceived by subject 3 as less facilitative to performance in comparison to the pre-SMIP condition. The self-confidence prior to the cross-country was considerably higher in the post-SMIP, however, it was still perceived as debilitating to performance (Table 7.4.2). Subject 3 reported a slight increase (4%) in his *perceived readiness* for the competition in the post-SMIP condition as measured by the PEQ (pre-SMIP = 36/63; post-SMIP = 39/63).

**Table 7.4.2:** Direction scores for CSAI-2 components for subject 3 in the pre- and post-SMIP condition.

Temporal Patterning Stages	Cognitive anxiety		Somatic anxiety		Self-confidence	
	pre-SMIP	post-SMIP	pre-SMIP	post-SMIP	pre-SMIP	post-SMIP
7 days before	-5	-6	3	2	3	-3
3 days before	-4	-10	5	1	13	2
1 day before	-3	-12	4	-3	7	-9
Dressage	3	-7	1	-2	11	-3
Show-jumping	-4	-5	2	3	12	0
Cross-country	-8	-9	-2	1	-4	-4
After event	-2	-3	8	8	2	4

*The horse trial performance*

Subject 3's performance improved considerably in all phases of the horse trial in the post-SMIP condition. In particular, subject 3 completed the cross-country round without being eliminated from the competition as in the pre-SMIP condition (Table 7.4.3).

**Table 7.4.3:** Actual performance scores for subject 3 during the phases of the horse trial for both pre- and post-SMIP competitions.

Competition	D	SJ	XC	XCT	Score	Position
Pre-SMIP	45	31	E	-	-	-
Post-SMIP	39	10	120	29	198	-

KEY:- E- Eliminated.

NOTE:- All scores are penalty scores. Eliminated means that the subject refused a cross-country jump three times and was then eliminated from the competition.

Subject 3's perceived success was evaluated in conjunction with the goals set for the competition and the actual performance achieved. The goals were increased in difficulty in the post-SMIP condition and reflect the progression through the goal setting programme as part of the SMIP. The perceived success and goal achievement significantly decreased in the show-jumping phase in the post-SMIP condition and subject 3 was disappointed with the performance in this phase. For the cross-country phase, the goal achievement significantly increased in the post-SMIP condition,

however, subject 3 perceived that he “...*could still have done better*” and was consequently disappointed with his and his horses performance in this phase.

The perceived success for the total performance in the horse trial was 2 - *somewhat successful*, in both the pre- and post-SMIP competitions. In the post-SMIP competition, subject 3 evaluates his performance for the horse trial as follows,

“...could have been placed if I was fitter”  
(post study assessment booklet)

### *Evaluation of the SMIP*

An important aspect of competing is the athlete’s enjoyment which was identified as a construct on the performance profile identified by subject 3. Post-SMIP, subject 3’s rating of *enjoyment* increased on the performance profile. He also indicated that his enjoyment had increased after the completion of the SMIP.

“(intervention) ...it has helped win part of the fun back that had been taken away from a kind of mechanical process”

p.14, B54

Subject 3 reported that the techniques were beneficial to his performance and formalised techniques he already used for competition. Subject 3 utilised the SMIP techniques prior to and during each phase of the horse trial. However, subject 3 indicated that in some situations the techniques had too great an effect and meant he lacked aggression. When problems did arise, for example the run out in the show-jumping, subject 3 indicated that he again used the SMIP techniques to recover from the situation. This was supported by the interview analysis and the improvement of *ability to recover* on the performance profile.

“(show-jumping) I was glad that I had enough thought to deal with the situation, take him round, jump it cool and calm”

p.12, B45

#### 7.4.4 Discussion

The psychological constructs directly targeted by the SMIP, *confidence*, *ability to recover* and *adaptability*, were perceived by subject 3 to have improved in the post-SMIP. These constructs were targeted by the cognitive restructuring, positive self-talk and relaxation techniques. Subject 3 was more confident and able to recover from problems that occurred during a competition. The post-SMIP interview analysis also indicated subject 3's increased ability to recover from potentially problematic situations during the dressage phase by utilising the SMIP techniques where appropriate. This result provides evidence to support the achievement of aims 1 and 2.

“(dressage) Basically, it's down to if you get a problem...I think previously what I would have done...I would have thought 'Shit!! What a mess', but I thought 'No, you are going to halt squarely and we are not going to go anywhere’”.

Post SMIP interview (p. 10, B38).

The CSAI-2 analysis indicated changes in the level of anxiety and the interpretation of those levels by subject 3 in the post-SMIP condition. The cognitive anxiety was perceived by subject 3 as more debilitating to performance throughout the pre-competition and competition phases in the post-SMIP. The evidence of subject 3's lack of experience and previous failures provided some explanation for the interpretation of cognitive anxiety as debilitating (Jones, Hanton and Swain, 1994). The direction scores were, however, more debilitating in the post-SMIP than in the pre-SMIP despite the SMIP. A possible explanation for this was subject 3's interpretation of the post-SMIP competition as a 'make or break' competition which overrode the effects of the SMIP. The possibility that subject was not sufficiently employing the SMIP techniques for the post-SMIP was not substantiated by the evaluation of the SMIP.

For the cross-country phase, the self-confidence was higher in the post-SMIP condition. This was an unusual result as the cognitive anxiety for this phase had increased in the post-SMIP. It was possible that subject 3 successfully employed

positive self-talk techniques which boosted levels of self-confidence with regard to his ability, yet did not address his specific concerns regarding the cross-country phase and particular fences.

“My main aim on the cross-country was to get around. That is all I wanted to do, just get around. The only doubt I had in my mind was the ‘coffin’”  
p.11, B42.

Subject 3 experienced a reduction in the level of anxiety for the horse trial and specifically for the show-jumping phase. Subject 3 did not achieve his goal of a clear round in the show-jumping phase but incurred 10 penalties for a refusal and perceived his increased relaxation may have caused this result. This result highlighted an important aspect of stress management intervention programmes. The relaxation techniques and positive self-talk resulted in subject 3 becoming too relaxed and possibly complacent prior to the show-jumping and cross-country phases and this was reflected in the outcome. Hanin (1980; 1991) identified the Individual Zone of Optimal Functioning (IZOF) theory where performance deteriorates if anxiety, before or during the task, falls outside the previously identified IZOF. In this case, subject 3's anxiety level fell below his IZOF and he became too relaxed. Clearer identification and monitoring of the subject's optimal level of anxiety (IZOF) is needed for future usage of SMIP's to ensure the subject does not fall outside the ZOF prior to performance.

#### *The horse trials performance*

An explanation for the poor performance and lack of goal achievement in the show-jumping phase is related to the levels of anxiety reported by subject 3 and his interpretation of these levels. Evidence indicated that subject 3 became too relaxed and lacked the aggression to attack the show-jumping course. The evidence suggested that subject 3 reduced his pre-show-jumping worry too much using the SMIP techniques and was thus outside his IZOF for that phase.

“(show-jumping) The fact that I was relaxed meant that I had lost a bit of the edge. There should have been a level of aggression there, but there wasn't, I had gone too far really”

Post study interview (p.4, B14).

In the cross-country phase, subject 3 perceived himself as successful in achieving his goal. He completed the course, although he incurred 120 jumping penalties and 29 time penalties in this phase and reported that he was disappointed with his final score which did not match the performance of the horse. The reason for his disappointment was his lack of fitness which resulted in him being unable to rider sufficiently strongly into fences. Subject 3 again reported feeling too relaxed during the cross-country phase and did not have the level of aggression required to attack the course.

*“(Cross-country) I had been too successful in getting myself from a level of adrenaline and aggression, I got myself down too far again, and he took advantage. There should have been aggression and adrenaline. I was physically just gone by the run out at 14”*

Post study interview (p.12, B45).

The aims of this case study were only partially supported by the results in the post-SMIP. Future intervention programmes need to make the subject aware of the dangers of reducing arousal levels too far.

#### *The evaluation of the SMIP*

The SMIP was successful in re-developing the enjoyment subject 3 gained from competing. Subject 3 considered the techniques helped formalise strategies that he was already employing for competition and reinforced his view that the key to competition is trying to keep control of his mind.

In terms of reduction of anxiety levels and increased performance levels, the SMIP did not have significant effects on cognitive anxiety and self-confidence but had too great an effect on somatic anxiety for the show-jumping and cross-country phases. Subject 3 reported being too relaxed for these phases and consequently did not ride with enough competitive aggression. It was possible that the importance of the event overrode the effect of the SMIP techniques with regards to cognitive anxiety and self-confidence. The SMIP did not generate a positive mental state for all phases of the competition and reduced anxiety too far for the show-jumping and cross-country phases.

#### *7.4.5 Conclusion*

The results indicated that subject 3

- utilised the SMIP techniques throughout the horse trial and perceived them to formalise techniques he previously used for competition. This provided evidence to support the achievement of aim 1
- experienced a reduction in anxiety in the competition period which was not consistently perceived as facilitative to performance
- reported a reduction of anxiety that was too great for the show-jumping and cross-country phases and thus provides partial support for the control of anxiety throughout the horse trial (aim 2).

Future intervention programmes need to monitor levels of anxiety more closely to ensure the individual remains in his/her ZOF. It was possible that the SMIP techniques were not sufficiently rehearsed by subject 3 and need a longer time period for the learning of these skills. It was also possible that the importance of the event as a 'make or break' competition overrode the positive effects of the SMIP. The SMIP did not sufficiently take into consideration the physical aspects of competition and their effect on the psychological state of the subject. The length of the intervention, the antecedents of anxiety and the physical aspects of riding would need to be addressed in future SMIP investigations.

## 7.5 Inter-case study comparisons

### *7.5.1 Introduction*

The effectiveness of the SMIP for each case study was assessed by analysing the changes in psychological constructs, performance and perceived success (7.2, 7.3, 7.4). The assessment of these changes within the collective case study design, enabled the researcher to make suggestions about the effectiveness of the SMIP (see Section 7.1.1 for a more detailed explanation).

It has been recognised that the negative effects of anxiety can be detrimental to the performance of athletes (Harris & Harris, 1984; Martens et al., 1990). Stress management intervention programmes have been found to be successful in reducing the levels of anxiety experienced by individuals, developing a positive perception of anxiety and hence reducing the negative effects of this anxiety on performance (Crocker et al., 1988; Maynard & Cotton, 1993).

The nature of the sport of horse trials, as with other sports, involves the rider performing against other competitors, in front of judges and spectators. Consequently, the rider is allowing him/herself to be openly evaluated and judged by his/her performance. For this reason together with the high risk nature of the sport and increased pressure to win, increased levels of anxiety may be experienced by riders. The aim of the collective case study design was to assess the effectiveness of a stress management intervention programme in *reducing pre-competitive state anxiety and improving performance for horse trials riders*. Implications for riders experiencing negative symptoms of pre-competitive state anxiety were made together with recommendations as to its usage in the future.

### *7.5.2 Method*

#### *Subjects*

Three horse trials riders based in the Merseyside region formed an opportunity sample for this study. Subject 1 (43 year old female) competed at a Novice horse

trials level. Subject 2 (21 year old female) competed at an Advanced horse trials level and subject 3 (36 year old male) competed at a Pre-Novice and Novice horse trials level. It was not possible to match subjects for age. Other factors such as willingness to undertake the testing procedure and location were important factors in the identification of subjects in the study.

Subjects were matched for pre-competitive state anxiety levels, specifically, individual's perception that their anxiety level was above their optimum for some or all of the horse trial was the criteria used for matching the subjects. Consequently, a measure of subjective interpretation of anxiety was used. All subjects reported that they experienced anxiety levels over the optimum in one or more phases of the horse trial. It was not possible to control the environmental conditions for each subject. Subjects came from different backgrounds and financial situations. Consequently, factors such as facilities available for training, financial support for training and competition and other commitments may have differed between the subjects.

### *Design*

Collective case studies were employed where the researcher studies three different case studies at the same time and employed the same research methods for each subject (Robson, 1993). The purpose of this section was to examine the changes in psychological constructs, performance and perceived success for each of the case study subjects together. The study incorporated baseline assessment, implementation of the SMIP and assessment through competition measures and subjects' evaluation of the SMIP. For a detailed discussion of the design, see Section 7.1.1.

### *Measures*

The collective case studies design incorporated both quantitative and qualitative measures of psychological constructs relating to multidimensional competitive state anxiety and horse trials performance. These measures included; questionnaire measurement of multidimensional trait anxiety, a semi-structures interview, a performance profile and a competition assessment booklet (Section 7.1.2 and 7.1.4).

The usage of quantitative measures such as the CSAI-2 and qualitative measures such as the semi-structured interview, allowed the researcher to compare validated questionnaires between the subjects and also obtain detailed information regarding the subjects' individual experience throughout the competition. It has been suggested that analysis of individual experiences can provide a greater understanding of the complex construct of anxiety (Weinberg et al., 1993).

### *Data Analysis*

The quantitative and qualitative measures were compared between the three case studies to assess changes in psychological constructs. Consequently the effectiveness of the SMIP in reducing anxiety levels and developing a positive perception of this anxiety was assessed. Actual performance measures and perceived success were also compared to assess the effectiveness of the SMIP for improving performance. As measures were relative to the individual, percentage changes were used in the comparison between the collective case study subjects.

### *7.5.3 Results*

The collective case studies results incorporated the comparison between subjects for the psychological constructs, the horse trials performance and the evaluation of the SMIP.

#### *The psychological constructs*

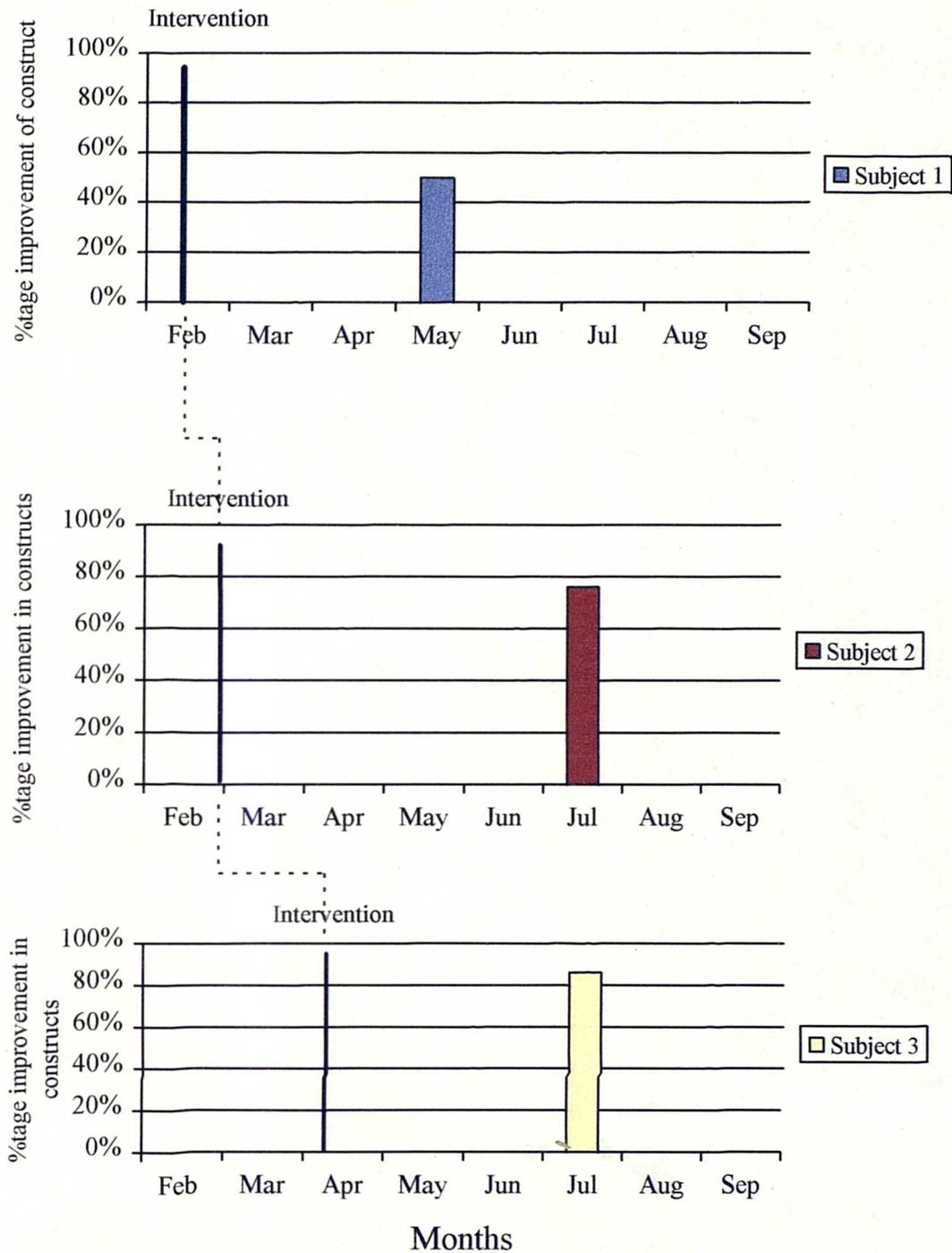
The performance profile assessed the self-rated improvement of constructs in the post-SMIP. Each subject chose a different number of constructs they believed were important qualities that an elite horse trials rider should possess. The constructs identified by each subject were also different between the subjects. Hence, direct comparison of these constructs was not possible. However, the percentage of the number of constructs that had improved in the post-SMIP was possible (Figure 7.5.1). The graphs display the month in which the intervention commenced. Due to the collective case studies design, the subjects started the intervention in a staggered format. The bar displays the percentage of the number of constructs which improved

in the performance profile assessment post-SMIP. Again the bars were staggered through time and showed that more than 50% of constructs improved in the post-SMIP for each subject (Figure 7.5.1).

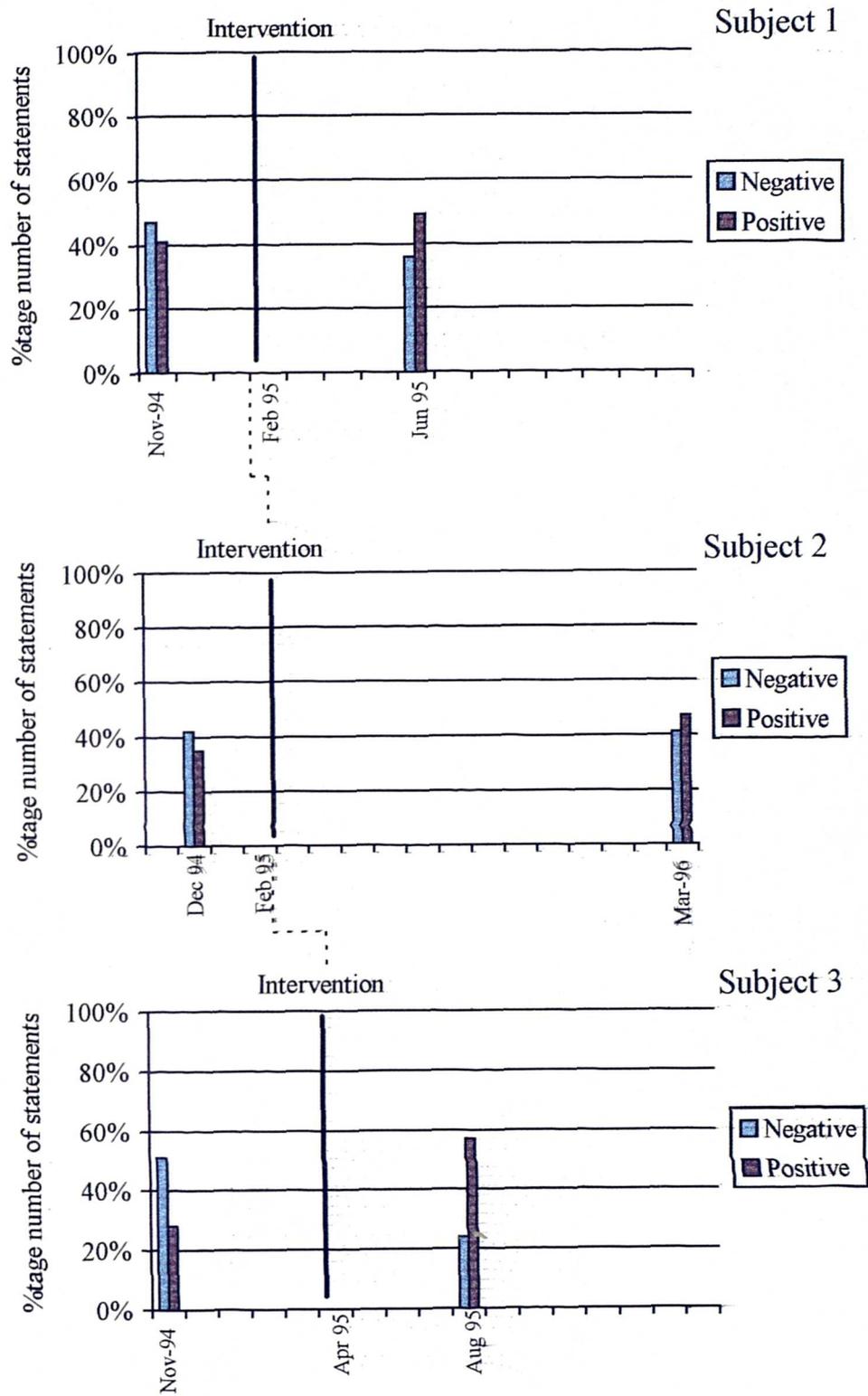
The third aim of each case study was to develop a positive mental state for horse trials performance. Each subject in the collective case studies design identified *confidence* as a construct on their performance profile. The percentage improvement on this construct after the completion of the SMIP was compared between subjects. Both subjects 1 and 2 reported a 10% improvement in *confidence*, whereas subject 3 reported a 20% improvement.

The semi-structured interview transcripts were analysed in terms of percentage number of positive or negative statements in each first order factor. Some of the statements reported were neutral statements and referred to aspects of training, preparation and competition, but were neither positive or negative in content. The use of percentages allowed the comparison between subjects in the collective case studies design.

The percentage number of negative and positive statements in the interview analysis were compared between subjects in the pre- and post-SMIP condition (Figure 7.5.2). As with Figure 7.5.1, the staggered implementation of the SMIP is seen on the graphs for each subject. The results revealed a decrease in percentage negative statements and an increase in percentage positive statements for each subject after the SMIP. Subject 2 competed in the competition assessment (week 9) much later than planned due to injury. Also, due to commitments to her University course, subject 2 did not undertake the evaluation of the SMIP (week 10) until March 1996. These factors were considered during the analysis of subject 2's data.



**Figure 7.5.1:** The percentage of performance profile constructs improved in the post-SMIP condition for each subject in the collective case studies design.



**Figure 7.5.2:** The changes in percentage number of negative and positive statements in the pre- and post SMIP interview analysis for subjects 1, 2 and 3 in the collective case studies design.

Competitive state anxiety was measured using the modified version of the CSAI-2 (Jones, 1991; Martens et al., 1990). To assess the effectiveness in reducing state anxiety, the CSAI-2 results were compared between the pre- and post-SMIP competitions for each subject. The change in CSAI-2 scores was calculated for each subject in the collective case studies (Table 7.5.1). Mean CSAI-2 scores were calculated for the pre-competition and competition period for each subject; the CSAI-2 score after the event remained the same. Consequently the specificity of the temporal patterning of the CSAI-2 results was reduced, however, the percentage change in the pre-competition, competition and post competition period could easily be analysed between the three case study subjects using this method. Results were presented as either an increase (↑), decrease (↓) or no change.

**Table 7.5.1:** The percentage change in CSAI-2 components in the post-SMIP condition for each subject in the collective case studies design.

Subject	Cognitive anxiety	Somatic anxiety	Self-confidence
<b>Subject 1</b>			
Pre-competition	2% ↑	18%↑	13% ↓
Competition	5% ↑	18%↑	4% ↑
After	6% ↓	no change	no change
<b>Subject 2</b>			
Pre-competition	11% ↓	8% ↓	5% ↑
Competition	12% ↓	7% ↓	3% ↑
After	44% ↓	no change	22% ↑
<b>Subject 3</b>			
Pre-competition	no change	10 % ↑	2% ↓
Competition	no change	9% ↓	2% ↑
After	no change	3% ↓	8% ↑

**KEY:-** no change - no change in CSAI-2 scores between pre- and post-SMIP.  
 ↑ - increase in CSAI-2 score between pre- and post-SMIP.  
 ↓ - decrease in CSAI-2 score between pre- and post-SMIP.

**NOTE:-** Due to the scoring system of the CSAI-2, an increase in cognitive and somatic anxiety is a higher level of anxiety experienced. An increase in self-confidence is a higher level of confidence. Improvements are usually seen when cognitive and somatic anxiety decrease and self-confidence increases.

The percentage change in CSAI-2 scores varied between each subject in the multiple baseline design. Subject 1 experienced increased cognitive and somatic anxiety in the pre-competition and competition phases; decreased confidence in the pre-competition phase and increased confidence in the competition phase. Subject 1 maintained her positive perception of CSAI-2 levels in the post-SMIP (see also, Section 7.2.3). Subject 2 showed decreased cognitive and somatic anxiety and increased self-confidence throughout the horse trial. She also perceived these changes as more facilitative to her performance. Subject 3 experienced more debilitating levels of anxiety and self-confidence in the pre-competition period. In the competition period, somatic anxiety decreased which was perceived as slightly facilitative to performance. His self-confidence increased in the competition period and was unusually perceived as debilitating to performance. The results did not provide similar changes between subjects in the collective case studies design.

*The horse trials performance*

Actual performance and perceived success were analysed in terms of the improvements post-SMIP for each subject in the collective case studies design. The actual performance indicated the reduction in penalty scores for each subject in the post-SMIP condition (Table 7.5.2).

**Table 7.5.2:** The changes in actual penalty score for the horse trial between the pre- and post-SMIP competition assessment for each subject in the collective case studies design.

Subject	Pre-SMIP	Post-SMIP
1	52	36
2	79	52
3	Eliminated	198

The perceived success in the horse trials were obtained from the subjects scores on a rating scale of 1 (*not at all successful*) to 4 (*very successful*). Table 7.5.3 presents the perceived success scores for subjects 1, 2 and 3 prior to and after the SMIP. The results indicated an improvement for only subject 2. The horse trial comprises three

separate phases and it was necessary to analyse the perceived success for each phase of the horse trial between the subjects. Subject 1 maintained her perception of success in one phase of the horse trial, the cross-country. Subject 2, perceived that she had improved in both the show-jumping and cross-country phases. Whilst, subject 3 perceived he had improved in the cross-country phase. Hence, subjects' perceived success increased in at least one phase of the horse trial if not in terms of the total horse trials performance.

**Table 7.5.3:** The perceived success of the horse trial for all subjects in the pre- and post-SMIP competitions.

Subject	Pre-SMIP	Post-SMIP
1	4 - very successful	4 - very successful
2	3 - moderately successful	4 - very successful
3	2 - somewhat successful	2 - somewhat successful

#### 7.5.4 Discussion

The collective case studies design investigated the effectiveness of the SMIP on pre-competitive state anxiety levels and development of a positive attitude for each of the three case studies in horse trials.

#### *The psychological constructs*

The performance profile results revealed the increase in at least 50% of constructs for each subject within the collective case studies design. As previously discussed for each subject, (Sections 7.2.4, 7.3.4 and 7.4.4), the performance profile improvements were suggested to be the result of the SMIP techniques. Constructs directly targeted by the SMIP, such as, *confidence, ability to relax, dealing with mistakes*, increased

for each subject. As improvements were observed in each case study, it was evident that the self-rated improvements in the performance profile constructs were possibly related to the effect of the SMIP.

Butler et al., (1993) identified self-reported improvements in psychological constructs, in particular, *self-confidence*, for an elite boxer after visualisation techniques were implemented. The present study identified improvements in *confidence* for each subject in the multiple baseline design. Self-confidence was directly targeted by the SMIP techniques through cognitive restructuring and positive self-talk. These techniques were the probable cause of the improvements in *self-confidence*, through the development of the subjects' awareness of their strengths and ability for horse trials (Kubistant, 1986).

The semi-structured interview analysis showed the decrease in percentage negative statements and increase in percentage positive statements between the pre- and post-SMIP for each subject in the collective case studies design. As previously discussed, each subject reported the benefits of the SMIP techniques; cognitive restructuring and positive self-talk. It was suggested that the cause of the increase in positive statements was the implementation of the SMIP techniques into the subjects' training programme and their increased ability to utilise these techniques during competition. Caution must be given to the results for subject 2. Interview analysis of the post-SMIP condition was much later than previously timetabled due to other commitments. It was possible that subject 2's recollection of the SMIP usage at this stage was not wholly reliable. The results did however, show the improvement for subjects 1 and 3. Consequently, the researcher suggested that the improvements were due to the SMIP rather than extraneous variables. This result supported other stress management intervention studies utilising cognitive restructuring and positive self-talk in multi-modal stress management programmes. These studies found a decrease in the number of reported negative statements and a reduction in cognitive anxiety (Crocker et al., 1988; Maynard & Cotton, 1993).

The CSAI-2 results did not provide evidence to support similar effects of the SMIP for each subject. CSAI-2 changes were varied both between and within subjects. This was probably due to the complex nature of anxiety and the individual anxiety responses in given situations. Borkovec (1976) and Martens et al. (1990) emphasised the individual nature of anxiety response and concluded that some individuals may experience predominantly cognitive symptoms whilst others exhibit predominantly somatic symptoms. Each subject did experience some positive benefits of the SMIP in terms of anxiety and confidence experienced. These were reported in the results and discussions for each subject (see sections 7.2, 7.3, and 7.4). With regard to the collective case studies design, possible factors that countered the effect of the SMIP on CSAI-2 scores were; the increased importance of the competition outweighing the effects of the SMIP and the utilisation of SMIP techniques as coping skills to recover from problems during the competition rather than reducing anxiety levels prior to the competition.

A further problem associated with the CSAI-2 results involved the timing of the questionnaire completion. The completion of the CSAI-2 during field research has presented problems (see Section 5.6) as a result of its length and the necessity to complete it as close to the competition as possible to ensure true state anxiety levels are exhibited. In horse trials, riders may warm up approximately 3/4 hour prior to the competition to ensure both horse and rider are fully prepared for the competition. It was impractical and too disruptive to ask riders to complete the CSAI-2 10 minutes before the competition. Therefore, the instructions given to riders were *'please complete (the CSAI-2) as close to half an hour before as is practical for you'*. In some cases, this measure may not present a true measure of state anxiety. Further assessment of the MRF as a valid and reliable measure of state anxiety (Krane, 1994) may advance the competitive state anxiety research. State anxiety measures could easily be obtained immediately before the competition due to its shortness in comparison to the CSAI-2 and its user-friendliness.

### *The horse trials performance*

The actual performance results showed the decrease in penalty scores, hence improvement in performance for each subject within the collective case studies design. With the evidence provided in each case study (Sections 7.2, 7.3, 7.4), it was possible to suggest that the improvements were due to the SMIP. The SMIP included psychological aspects, that is, the control of anxiety and the development of a positive attitude towards performance and physical aspects of riding. The perceived success results indicated that all subjects perceived they had maintained or improved performance in at least one of the horse trials phases. These improvements occurred within the collective case studies and can therefore be suggested to have been caused by the SMIP.

An important aspect of the subjects' evaluation of the horse trial was their ability to separate each phase of the horse trial and analyse their performance in each phase. Perceived success in one phase did not guarantee a perception of success in the whole horse trial. Also, a good actual performance score did not always guarantee a perception of success in that phase. Quite often, riders achieved a good score but were not pleased with the quality of performance or they achieved a poor score but perceived their performance as very successful. It is important to remember to analyse actual performance scores and perceived success to obtain a complete picture of the riders' thoughts and feelings regarding a competition.

A possible explanation for the improvement in performance and perceived success instead of the SMIP was the increase in experience of the subjects through time. The measurements were approximately nine months apart and the improvements could therefore have been a result of the increasing experience through training and competing in horse trials. However, the evidence provided in each case study regarding the evaluation of the SMIP techniques and their usage, it was suggested that each subject utilised the SMIP techniques during competition.

*“(prior to the show-jumping) Awful, it was awful! I had to keep sorting myself out...you know, I said “I can do it” and I did the breathing and “I can do this and I can sort it out...we may struggle, but you can get round here”...and it sort of stopped me backing off”*

Subject 1 (post study interview, p.10, A54-56)

*“...the positive self statements, they were kept in the lorry, I did the week before...I suppose it does help...it’s stuff you know anyway, but it helps you point it out to yourself”*

Subject 2 (post study interview, p.4, J26)

*“The techniques that you were going through...it has helped me believe that if part of my ritual goes wrong, then it doesn’t matter, I just take a deep breath and concentrate. It’s positive rather than negative”*

Subject 3 (post study interview, p.14, B53)

It was possible that the improvements in performance and perceived success were due to both the implementation of the SMIP techniques and the natural gain of experience through time. To establish the actual reason for the improvements would require further research incorporating matched control subjects who do not receive the stress management intervention in comparison to the experimental group who receive an intervention programme. This research design has been employed by researchers utilising multi-modal stress management intervention programmes previously (Mace et al., 1986; Crocker, et al, 1988, Crocker, 1989).

A problem that does arise in these studies is the accurateness of the match between control and experimental subjects, particularly when studying psychological variables in different situations. Jones and Swain (1995) have recently established that athletes have predisposition’s to regard anxiety as facilitative or debilitating to performance. It may be possible in future research to match subjects based on their trait anxiety and state anxiety, their perception of anxiety as facilitative or debilitating to performance and their perceived coping potential.

An alternative method incorporates the use of a multiple baseline design across subjects where an intervention technique or treatment is applied to subjects in a study

in succession. A comparison of the final behaviour and the initial baseline level is made to establish whether the intervention or treatment has been successful. If a change in the target behaviour is observed at the same time point for each subject in the multiple baseline design, it can be suggested that this change was due to the treatment rather than extraneous variables (Hersen & Barlow, 1976; Murphy & Bryan, 1980). The multiple baseline design avoids the problems associated with identifying matched control subjects for sport psychology intervention studies.

#### *The evaluation of the SMIP*

All subjects perceived improvements in psychological constructs relating to horse trials performance and in the actual performance and perceived success after the SMIP. The collective case studies design demonstrated the improvements occurred at the same time point in the SMIP relative to each subject. Consequently, it has been suggested that the effects were due to the stress management intervention programme implemented into each subjects training and competition schedules.

During the collective case studies, problems associated with illness, injury and holidays were encountered resulting in a delay between the meetings of the researcher and the subject. The problems encountered were related to natural occurrences in a real life sport psychology consultancy situation. Therefore, the results highlighted the successful effect of the SMIP when things did not always go as planned. Hence, it is suggested that the ecological validity of the study was enhanced by these occurrences. SMIP techniques can still have an effect in real life situations.

To establish whether the effects of the SMIP were permanent, further data collection points would be required. This would also investigate whether the SMIP continued to have a positive improving effect or whether there was a peak level, after which SMIP techniques had no further effect.

Whilst acknowledging the problems encountered in the study, general trends in the data were shown. The results provided initial support for the usage of an SMIP for the

control of competitive state anxiety, development of a positive attitude and the improved horse trials performance for horse trials riders. Future development of the research requires the utilisation of a multiple baselines design. In the present study, the small sample size resulted in a wide variation in case study results. A larger sample would also increase the external validity of the usage of the SMIP for horse trials riders.

#### *7.5.5 Conclusion*

The implementation of an SMIP through a collective case studies design provided initial support for the usage of SMIP techniques for horse trials riders. The three case studies reported some reduction of anxiety, increased ability to recover from mistakes, development of more positive attitudes and an increased perception of success. The problems encountered in this study highlight the areas for future development in this area of research. The collective case studies design allowed for ecologically sound studies to be conducted as they enable the study of athletes in their natural environment. Future research should embrace the areas for improvement and attempt to enhance sports psychologists understanding of the effects of multi-modal stress management intervention programmes for athletes psychological skills and performance.

#### *7.6 Summary*

Subject 1 reported successfully employing the stress management techniques during the phases of the horse trial. In particular, subject 1 reported that her improved performance in the show-jumping phase was mostly due to cognitive restructuring and positive self-talk. The results indicated her increased awareness of her psychological state and her ability to employ the techniques when required. Subject 1 did not show significant reductions in anxiety. She did however, maintain a positive perception of the anxiety which together with the coping skills resulted in an improved performance.

The results for subject 2 showed a decrease in cognitive and somatic anxiety and an increase in self-confidence. Subject 2's perception of these levels were more facilitative after the SMIP. Subject 2's performance also improved. She reported successful usage of the SMIP techniques, however, was sceptical about their benefits. It was suggested that because subject 2 was an elite horse trials rider, her coping skills may have been innate. To focus her attention on positive self-talk strategies, for example, created a 'false' situation for her to deal with. She reported that imagery based techniques would be useful to her.

Both subject 1 and 2 reported the problems with employing the techniques between phases. It was noted that stress management intervention techniques must take into account the practical aspects such as time and facilities available to ensure the athletes gain the full benefit of the techniques and continue to utilise them during competition.

Subject 3 experienced increased cognitive anxiety which he perceived as more debilitating to performance after the implementation of the SMIP. It was suggested that the importance of the competition as a 'make or break' competition overrode the effects of the stress management techniques. The SMIP was successful in reducing somatic anxiety prior to the show-jumping and cross-country and increasing the self-confidence prior to the cross-country for subject 1. The relaxation techniques were, however, too successful prior to the show-jumping where subject 3 had a poor performance which he indicated was the result of being too relaxed. Levels of anxiety and self-confidence need to be monitored more closely to ensure the athlete becomes under-aroused or complacent. Subject 3 reported the successful usage of coping skills throughout the phases of the horse trial.

An interesting finding for subject 3 was his statement that the problems in the cross-country phase were due to his lack of fitness. This aspect of riding was not addressed in the SMIP. It does, however, highlight the need for a holistic and combined Sport Science approach to the improvement of performance for athletes. This approach has been applied to a motorcross rider with positive results in psychological,

physiological and nutritional aspects of Sport Science (Collins, Doherty & Talbot, 1993).

The collective case studies design provided initial support for the usage of stress management intervention programmes for horse trials riders. It was acknowledged that the improvements in each subject may have been due to time and gain of experience, however, the collective case studies indicated the effectiveness of the SMIP rather than extraneous variables. Further development of this research methodology would encompass a multiple baseline design and increased post treatment measurements to assess the permanency of the treatment effect.

## CHAPTER 8

Synthesis of investigations: Multidimensional state anxiety in horse trials and the implications of stress management techniques on riders.

## **8.0 Synthesis of investigations: Multidimensional state anxiety in horse trials and the implications of stress management programmes on riders.**

The work in this thesis utilised both quantitative and qualitative research methods in the analysis of multidimensional state anxiety in horse trials and the implementation of stress management programmes for horse trials riders. The work encompassed the psychology of the human athlete, but also investigated the links between human and equine behaviour.

### **8.1 Research findings**

#### *8.1.1 Multidimensional state anxiety*

A large amount of research has encompassed the patterning of competitive state anxiety prior to, during and after the competition (Gould et al., 1984; McAuley, 1985; Jones & Cale, 1989). The findings of this thesis supported the temporal patterning of multidimensional competitive state anxiety identified in the literature. Horse trials riders experienced similar patterns of anxiety in comparison to male and female athletes (Jones & Cale, 1989), volleyball players (Gould et al., 1984), gymnasts and golfers (Krane & Williams, 1987).

Individual fluctuations in cognitive anxiety, somatic anxiety and self-confidence occurred. Explanations for these fluctuations were the riders' cognitive appraisal of the situation or stressor and their interpretation of this situation as threatening. The interpretation is dependent on the level of trait anxiety and past experience but also, the riders' perception of the antecedents of anxiety.

In Section 6.1 several key antecedents which affected the anxiety and self-confidence levels of the rider and hence performance were identified. Specifically, and in accordance with other researchers (Morris et al., 1981; Gould et al., 1984; Jones et al., 1990), perceived readiness was a significant indicator of self-confidence prior to the competition and performance. Perceived readiness included aspects of the riders' training, past performances, physical and mental readiness and the level of fatigue.

The antecedents of cognitive and somatic anxiety were not identified by this research. However, through analysis of interview data, several key antecedents were identified by riders which had not been incorporated in the measurement of antecedents. The further antecedents which were specific to horse trials included aspects of the horses preparation and training, the rider and horse interaction (Section 5.1), spectators, other competitors, the subjectivity of the phases and the site layout. It is anticipated that further analysis of these antecedents in relation to anxiety would yield more significant results.

An additional aspect in the temporal patterning of anxiety was the measurement of state anxiety *between* multiple phases of the competition (Martens et al., 1990). This provided a clearer understanding of the anxiety patterns throughout competition and highlighted the effect of performance and perceived success on subsequent anxiety levels, performance expectations and perceived readiness for the next phase of the competition. Specifically, a good performance and a high level of perceived success in one phase increased levels of self-confidence prior to the next phase (Section 5.5). Also, riders who performed well in one phase had a higher level of perceived readiness prior to that phase than poor performers (Section 6.1). A high level of perceived readiness and self-confidence are necessary to combat the negative effects of anxiety. Anxiety and self-confidence measurement must be specific to the sport under study and therefore measure these psychological constructs at key times for that sport.

The show-jumping phase was identified as a phase which increased levels of anxiety and decreased self-confidence. It is suggested that the show-jumping phases causes concern for the riders due to the need for extreme accuracy and control of the horse in this phase. The cross-country phases also elicited high levels of anxiety which were possibly related to the danger involved with this phase. Horse trials are considered a high risk sport and many riders are aware of this aspect. Individual fluctuations occurred in the levels of anxiety prior to each phase and should be assessed through

the identification of the antecedents prior to each phase. This was undertaken in the interview analysis for each case study subject in Investigation 3.

The lack of relationships between anxiety and performance was suggested to be due to the fact that athletes interpret anxiety levels in different ways (Alpert & Haber, 1960; Mahoney & Avenier, 1977; Jones et al., 1993). Some athletes may interpret anxiety as facilitative to performance whereas other athletes may interpret it as debilitating to performance. Section 5.6 indicated that self-confidence was a key factor in the interpretation of anxiety as facilitative or debilitating. Increases in self-confidence led to riders interpreting both cognitive and somatic anxiety as more facilitative. This has important implications for stress management. If the riders' perceived readiness is enhanced, then self-confidence levels will increase and it is more likely that the riders will perceive their anxiety as beneficial to performance, thus reducing the negative effects normally associated with anxiety. Consequently, performance levels will improve. This process was achieved with subject 2 in case study 2 (Section 7.3).

Further analysis of the direction dimension of multidimensional anxiety (section 5.6) indicated that Advanced riders interpreted anxiety and self-confidence as more facilitative than Novice riders throughout the horse trial. It is suggested that elite riders are able to view anxiety as facilitative and utilise it to energise their performance rather than suffer from the development of near panic states and negative self-verbalisations of less experienced riders (Mahoney & Avenier, 1977; Jones et al., 1993).

It has recently been suggested that athletes are predisposed to interpret anxiety as either facilitative or debilitating to performance (Jones & Swain, 1995). Consequently, it would be possible to predict through the measurement of the direction dimension of trait anxiety which athletes will interpret anxiety as facilitative and which will interpret it as debilitating. This will have a great impact on the applied Sport Psychology consultancy area.

A major aspect of the development of anxiety is the individual's perception of a lack of control over themselves or the situation. Through the measurement of causal attributions (Section 6.2) initial evidence was found to suggest a link between personal control and the level of perceived success. Personal control was higher for groups of riders who perceived they were successful than low perceived success groups. Again, self-confidence was found to be higher in the good performance groups in comparison to the poor performance groups. Further analysis needs to identify the relationships between personal control, perceived readiness and self-confidence prior to the horse trial.

The successful evaluation of the antecedents of anxiety, anxiety levels and direction of anxiety and the causal attributions in horse trials depends on the understanding of the rider and horse interaction. Section 5.1 provided initial empirical evidence to support the interaction between the rider and horse as advocated in the literature (Lockhart, 1990; Perreault, 1991; Fraser, 1992). This interaction has a large impact on the riders' anxiety levels, as previously identified (Section 6.1). In terms of the stress process, the rider's cognitive appraisal of the situation includes appraisal of him/herself and his/her horse and the decision that they can complete the task successfully. Any mismatch between the demands of the task and the rider and horses perceived ability can result in increased anxiety levels (Csikszentmihalyi, 1975).

As the rider experiences a state anxiety reaction he/she experiences increased physiological arousal. The increased muscle tension can detrimentally affect the rider's position and application of aids and cause the horse's performance to also deteriorate. The tension can also be transmitted to the horse through the riders body, forces of the legs against the horses side and through the increased forces applied on the reins to the horse's mouth. Section 5.1 also identified several behavioural indicators of increased tension in the horse; raising the head, hollowing the back and shortening the stride. These indicators can now be used by riders and coaches to identify when the horse has become tense and when performance of the rider and horse is likely to deteriorate.

Consequently, the analysis of anxiety and development of stress management intervention programmes must take into account the rider's perception and appraisal of the horse's ability and behaviour as well as other antecedents of anxiety associated with other sports.

### *8.1.2 Stress management programmes for riders*

As identified in the previous section and by other researchers (Gill, 1994) a stress management intervention programme must be individualised and incorporate techniques that are aimed specifically at the riders' weaknesses. They were designed to help riders overcome the detrimental effects of anxiety by reducing anxiety levels. The SMIP also aimed to increase self-confidence which potentially provides a barrier against the harmful effects of anxiety (see Section 8.1.1). Anxiety was targeted through the SMIP as it was envisaged that a reduction in anxiety or a more positive perception of anxiety would have the largest effect on performance.

The thesis incorporated the assessment of the effectiveness of the SMIP through a collective case studies design which is an area neglected in past research (Ravey & Scully, 1989; Maynard & Cotton, 1993; Meyers, 1995). For all three subjects which formed the case studies in the collective case studies, self-confidence was found to increase and for two out of three subjects it was found to increase in the phases specifically targeted by the SMIP; subject 1- the show-jumping phase; subject 3 - the cross-country phase. For subject 2, increases in self-confidence were observed, however both the dressage and show-jumping phases were targeted. The SMIP was successful in the show-jumping phase but not the dressage phase. It was suggested that the rider's perception of the horse's ability in that phase as debilitating was stronger than the positive effects of the SMIP techniques.

Subjects reported an increased level of perceived readiness, therefore supporting the evidence of relationship between perceived readiness and self-confidence. Perceived readiness was targeted through the SMIP technique, goal setting, which enabled riders to obtain precise feedback regarding their training and preparation and competition

experiences. However, a more interesting aspect of the case study findings was the subjects ability to utilise the SMIP techniques as coping skills during a phase of the competition to recover from mistakes as they arose. This was an aim of the SMIP. The result highlighted the subjects' increased awareness of their psychological state and personal control over the situation. Again, providing support for the link between personal control, perceived readiness and self-confidence. It was suggested that the employment of SMIP techniques by subjects enabled them to successfully break the Negative Performance Cycle (Section 3.3.2) and the Negative Thought Anxiety Cycle (Ziegler, 1980; Section 2.3.2) and reduce the negative effects of anxiety on performance.

In conjunction with the increases in self-confidence, it was envisaged that the SMIP would help to produce a positive attitude for performance and a positive perception of anxiety for each subject. This was successful for subject 2 who reported anxiety as more facilitative to performance after the implementation of the SMIP. This supported the suggestion of self-confidence as a key factor in developing positive perceptions of anxiety (Jones et al., 1993; see Section 5.6). Subject 1 maintained a positive perception of anxiety however, the techniques were not successful for subject 3.

It was suggested that subject 3's perception of the post SMIP competition as a 'make or break' competition overrode the positive effects of the SMIP and resulted in increased anxiety levels which were perceived as debilitating to performance. Subject 3 did however, report some increases in self-confidence and the successful utilisation of coping skills, again supporting the suggestion that self-confidence can act as a barrier to the detrimental effects of anxiety (Hardy & Jones, 1990; Jones et al., 1993). Subject 3 reported the increase in self-confidence in the cross-country and his performance in this phase also improved.

The results provided initial support for the utilisation of stress management intervention programmes to reduce the negative effects of anxiety, increase self-

confidence and improve performance in horse trials riders. The utilisation of SMIP techniques as coping skills during competition was supported and considered successful by the riders. The implications for the future are the education of riders in a) the identification of levels of anxiety and self-confidence, b) the interpretation of anxiety and self-confidence, c) the education of the effect of anxiety on performance and d) the development and utilisation of stress management techniques to combat anxiety and improve performance.

## 8.2 Application of the findings to BHS horse trials.

The information obtained in this study can be utilised by riders, coaches and team selectors alike. The main element is however, the education of riders, trainers and coaches in the areas of sport psychology and stress management and how they can be utilised to improve performance.

The work has already been utilised in the development of a National Coaching Foundation training package to develop the scientific knowledge of coaches in Great Britain. This package specifically deals with sport psychology; the rider and horse interaction and the effect of increased multidimensional anxiety on the performance of the rider, the horse and consequently the performance of the 'system'. Increased awareness of the effects of competition anxiety on performance in horse trials and the finding that multi-modal stress management intervention programmes do positively affect performance in horse trials can only serve to benefit the training of riders.

## 8.3 Developmental research areas

The definition of anxiety still lacks agreement between researchers. The measurement of anxiety direction increases the problems associated with the view of anxiety. It is possible for anxiety that is interpreted as facilitative, to performance to be perceived as 'excitement', 'psyched up' or 'motivation' rather than anxiety at all (Jones & Swain, 1992; Jones & Swain, 1995). This may have accounted for the lack of

relationships between anxiety and performance in some sections. Facilitative anxiety may not have been reported as anxiety because it was not perceived to be anxiety by riders. Analysis of riders' perceptions of anxiety as debilitating or facilitative to performance and the terms they apply to these emotions need to be examined.

The development of the RPQ as a psychometric tool for assessment of the rider and horse interaction is envisaged. Consequently, it may be possible to predict the level of anxiety experienced by the rider and the hence the possible effect on performance. Further assessment of the rider and horse interaction could encompass video analysis of the behavioural indicators of performance and stress, biomechanical measurement of forces produced by riders and the physiological measurement of heart rate. The development of a more sensitive sport specific measure of the antecedents of anxiety for horse trials riders (RPQ) could provide valuable information to again predict anxiety levels prior to performance.

Further assessment of the MRF as a valid and reliable measure of multidimensional competitive state anxiety for field settings is required. A problem encountered in this thesis was the measurement of anxiety prior to the phases of the competition. Due to the nature of the sport, the administration of questionnaires 10 minutes before the competition was impractical and likely to disrupt the competitors routine and adversely affect performance. Consequently, anxiety was measured by administering the CSAI-2 half an hour prior to the performance. The shortened MRF questionnaire (3 items) as opposed to the CSAI-2 (27 items) could enhance our measurement of anxiety in applied field situations.

The investigation into the different methods of data collection from subjects is required to increase the sample sizes for future analysis. In some sections (5.4, 6.1) the results have required a larger sample size for significant conclusions to be drawn. The flaw in the data collection was the questionnaire response rate particularly for the Advanced riders. The Advanced riders were semi-professional horse trials riders and were competing up to 5 horses in one day. It was thought that they were not able to

complete the questionnaires due to their busy schedule. The analysis of anxiety, skill level and performance was also subject to large within group variability. The development of a more sensitive measure of skill level rather than the discrete classifications of Novice, Intermediate and Advanced is required. Finally, the development of the multiple baseline design to assess the effectiveness of the SMIP would enhance this research (Hersen & Barlow, 1976) and increased post treatment measures to assess the permanency of the treatment effect. In addition the utilisation of matched control subjects would aid the assessment of the effectiveness of the SMIP.

## CHAPTER 9

### Conclusions and recommendations

## 9.0 Conclusions and recommendations

In Investigations 1 and 2 of this thesis, the findings;

- supported the view of anxiety as a multidimensional construct within the context of horse trials
- identified perceived readiness, self-confidence and personal control as key factors affecting the performance of riders and combating the negative effects of anxiety
- indicated that self-confidence developed a more facilitative perception of anxiety amongst horse trials riders
- indicated that Advanced riders had a more positive perception of anxiety than Novice riders, although this result was not significant
- revealed that perceived success generated increases in self-confidence and was a significant predictor of subsequent performance in the horse trial
- provided initial empirical evidence to support the interaction between the rider and horse
- indicated that perceived readiness predicted performance, however, no antecedents predicted CSAI-2 components. It was suggested that future measurement of the antecedents of anxiety must incorporate antecedents specific to the sport under study.

These findings provide evidence to support the achievement of Aims 1 and 2 (see Section 1.2).

In Investigation 3, the findings;

- identified that stress management intervention programmes developed the riders' awareness of their psychological state, increased self-confidence and enabled the riders to successfully implement coping skills throughout the competition
- produced performance improvements which were supported by the riders' increased level of perceived success

- provided initial support for the effectiveness of stress management programmes for horse trials riders via the collective case studies design.

These findings provided to support the achievement of Aim 3 in this thesis (see Section 1.2).

Based on the findings in this thesis, future analysis of the anxiety experience and the terms used by riders to explain the experience is suggested. Anxiety should be measured between the phases of the competition to establish the effects of performance and perceived success on the anxiety and self-confidence for the next phase of the competition. Researchers should closely evaluate the direction of anxiety and the antecedents of anxiety in the chosen sport. Stress management intervention programmes must incorporate individualised assessment and techniques to target weak areas of the athlete's performance. The development of specific psychometric tools to predict the interaction between rider and horse and the antecedents of anxiety will benefit the analysis of the riders' experience in horse trials. The work should be utilised to develop the education of riders, coaches and selectors in a) the effect of anxiety and self-confidence on the performance of the rider and horse and b) the effect of stress management intervention programmes on reducing anxiety, increasing self-confidence and the utilisation of coping skills during performance.

## CHAPTER 10

### References

;

## 10.0 References

- Albrecht, R.R. and Feltz, D.L. (1987). Generality and specificity of attention related to competitive anxiety and sport performance. *Journal of Sport Psychology*, **9**, 231-248
- Alpert, R. and Haber, R.N. (1960). Anxiety in academic achievement situations. *Journal of Abnormal and Social Psychology*, **61**, 2, 207-215.
- Bakker, F.C. (1991). Anxiety in sport: Why are findings contradictory? *Proceedings of the VIII European Congress of Sport Psychology*, Vol 1, Motivation, Emotion and Stress (Edited by J.R. Nitsch and R.Seiler), Sankt Augustin: Richarz Publikations.
- Bakker, F.C. and Kayser, C.S. (1994). Effect of a self-help mental training programme. *International Journal of Sport Psychology*, **25**, 158-175.
- Bakker, F.C., Whiting, H.T.A. and van der Brug, H. (1990). *Sports Psychology - Concepts and Applications*. New York: John Wiley & Sons.
- Bandura, A. (1977). Self efficacy: toward a unifying theory of behavioural change. *Psychological Review*, **84**, 2, 191-215.
- Bannister, D. and Fransella, F. (1986). *Inquiring Man - The Theory of Personal Constructs*. London: Croom Helm.
- Barnes, M.W., Sime, W., Dienstbier, R. and Plake, B. (1986). A test of construct validity of the CSAI-2 questionnaire on male elite college swimmers. *International Journal of Sport Psychology*, **17**, 364-374.
- Barnett, M.L. and Stanicek, J.A. (1979). Effects of goal setting on achievement in archery. *Research Quarterly*, **50**, 3, 328-332.
- Biddle, S.J.H. (1984). Attribution theory in sport and physical recreation: origins, developments and future directions. *Physical Education Review*, **7**, 2, 145-159.
- Biddle, S.J.H. and Jamieson, K.I. (1988). Attribution dimensions: Conceptual clarification and moderator variables. *International Journal of Sport Psychology*, **19**, 47-59.
- Blackshaw, J., Kirk, D. and Crieger, S.E. (1983). A different approach to horse handling based on the Jeffery method. *International Journal for the Study of Animal Problems*, **4**, 2, 117-123.
- Borkovec, T.D. (1976). Physiological and cognitive processes in the regulation of anxiety. In: *Consciousness and Self-regulation - Advances in Research, Vol 1* (edited by G.E.Schwartz and D.Shapiro), pp. 261-312. New York: Plenum Press.

- Borkovec, T.D., Weerts, T.C. and Bernstein, D.A. (1977). Assessment of anxiety. In *Handbook of Behavioural Assessment* (edited by A.Ciminero, K.Calhoun and H.E. Adams), pp.367-428. New York: Wiley.
- Bradley, G.W. (1978). Self-serving biases in the attribution process - an analysis and a critique. *Psychological Review*, **80**, 307-336.
- Breakwell, G.M., Hammond, S. and Fife-Schaw, C. (1995). *Research Methods in Psychology*. London: SAGE Publications.
- British Horse Society Horse Trials Group. (1979). British Horse Society Horse Trials Group Dressage Test A (Novice Standard) In *British Horse Society Horse Trials Group Rules* (1994), pp. 94. Kenilworth, Warwickshire: British Equestrian Centre.
- Bryan, A.J. (1987). Single-subject designs for evaluation of sport psychology interventions. *The Sport Psychologist*, **1**, 283-292.
- Bull, S.J. (1991a). Personal and situational influences on adherence to mental skills training. *The Sport Psychologist*, **13**, 121-132.
- Bull, S.J. (1991b). *Sport Psychology - A Self-help Guide*. Wiltshire: The Crowood Press.
- Burton, D. (1988). Do anxious swimmers swim slower? - re-examining the elusive anxiety - performance relationship. *Journal of Sport and Exercise Psychology*, **10**, 45-61.
- Butler, R.S. (1989). Psychological preparation of Olympic boxers. In *The Psychology of Sport - Theory and Practice* (edited by J. Kremer & W. Crawford), pp.74-84. The British Psychological Society Northern Ireland, Occasional paper.
- Butler, R.J. and Hardy, L. (1992). The performance profile: theory and application. *The Sport Psychologist*, **6**, 253-264.
- Butler, R.J., Smith, M. and Irwin, I. (1993). The performance profile in practice. *Journal of Applied Sport Psychology*, **5**, 48-63.
- Caruso, C.M., Dzewaltowski, D.A., Gill, D.L. & McElroy, M.A. (1990). Psychological and physiological changes in competitive state anxiety during non-competitive and competitive success and failure. *Journal of Sport and Exercise Psychology*, **12**, 6-20.
- Carver, C.S. and Scheier, M.F. (1988). A control-process perspective on anxiety. *Anxiety Research*, **1**, 17-22.
- Coles, F. (1987). Reducing the risks of eventing. *USCTA News*. **16**, 2, 20-22.

- Collins, D., Doherty, M. and Talbot, S. (1993). Performance enhancement in motorcross; a case study of the sport science team in action. *The Sport Psychologist*, 7, 3, 290-297.
- Cooke, L. (1986). Stress and anxiety in sport. A review of the state of the art. *Funded by the Sports Council. Carried out under the aegis of the British Society of Sports Psychology and Dr, G.J.K. Alderson at the Dept. of Physical Education and Human Movement Studies, Sheffield City Polytechnic.*
- Coolican, H. (1994). *Research Methods and Statistics in Psychology*. London: Hodder & Stoughton.
- Courneya, K.S. and McAuley, E. (1993). Efficacy, attributional and affective responses of older adults following an acute bout of exercise. *Journal of Social Behaviour and Personality*, 8, 729-742.
- Côté, J., Salmela, J.H., Baira, A. and Russell, S.J. (1993). Organising and interpreting unstructured qualitative data. *The Sport Psychologist*. 7, 127-137.
- Cox, R.H. (1990). *Sport Psychology - Concepts and Applications*. USA: Wm. C. Brown Publishers.
- Crocker, P.R.E. (1989). Evaluating stress management training under competition conditions. *International Journal of Sport Psychology*, 20, 191-204.
- Crocker, P.R.E., Alderman, R.B. and Smith, F.M.R. (1988). Cognitive-affective stress management with high performance youth volleyball players: effects on affect, cognition and performance. *Journal of Sport and Exercise Psychology*, 10, 448-460.
- Csikzentmihalyi, M (1975). *Beyond Boredom and Anxiety*. London: Jossey-Bass Publications.
- Dabrowska, H. (1993). Emotional-cognitive mechanisms of functioning of men and women in sports. *Biology of Sport*, 10, 4, 267-272.
- Danish, Hale and Petitpas (1993)
- Davidson, R.J. and Schwartz, G.E. (1976). The psychobiology of relaxation and related states: a multiprocess theory. In *Behavioural Control and Modification of Physiological Activity* (edited by D.I. Mostofsky), pp. 399-442. Englewood Cliffs, New Jersey: Prentice-Hall.
- Denzin, N.K. and Lincoln, Y.S. (1994). *Handbook of Qualitative Research*. London: SAGE Publications.
- Doyle, J.M. and Parfitt, G. (1995). Performance profiling and predictive validity. *BASES Abstracts*, Annual Conference, Belfast, Sept, 1995.

- Duffy, E. (1962). *Activation and Behaviour*. New York: John Wiley & Sons.
- Dunn, J.G.H. (1994). Toward the combined use of nomothetic and idiographic methodologies in sport psychology: an empirical example. *The Sport Psychologist*, **8**, 376-392.
- Easterbrook, J.A. (1953). The effect of emotion on cue utilisation and the organisation of behaviour. *Psychological Review*, **66**, 3, 183-201.
- Epstein, S. and Fenz, W.D. (1965). Steepness of approach and avoidance of gradients in humans as a function of experience: theory and experiment. *Journal of Experimental Psychology*, **70**, 1-12.
- Fenz, W.D. (1964). Conflict and stress related to physiological activation and sensory, perceptual and cognitive functioning. *Psychological Monographs*, **78**, 8, 585.
- Fenz, W.D. and Epstein, S. (1967). Gradients of physiological arousal in parachutists as a function of an approaching jump. *Psychosomatic Medicine*, **29**, 33-51.
- Fontaine, G. (1975). Causal attribution in simulated versus real situations: when are people logical, when are they not? *Journal of Personality and Social Psychology*, **32**, 6, 1021-1029.
- Fox, M.W. and Mickley, L.D. (Eds). (1994). *Advances in Animal Welfare Science*. Boston: Martinus Nijhoff Publishers.
- Fraser, A.F. (1992). *The Behaviour of the Horse*. Oxon: C.A.B. International.
- Furst, D.M. and Tennenbaum, G. (1986). The relationships between worry, emotionality and sport performance. In *Sport and Elite Performers* (edited by D.M. Landers), pp. 89-96. Champaign, Illinois: Human Kinetics.
- Gill, D.L. (1994). A sport and exercise psychology perspective on stress. *Quest*, **46**, 1, 20-27.
- Glaser, B.G. and Strauss, A.L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago: Aldine Publishing Co.
- Gordon, S., Roberts, P and Hartley-Edwards, E. (1989). *The Encyclopedia of Equestrian Sports*. London: Quarto Publishing Ltd.
- Gould, D. (1993). Goal setting for peak performance. In *Applied Sport Psychology - Personal Growth to Peak Performance* (edited by J.M. Williams), pp. 158-169. Mountain View, California: Mayfield Publishing Company.

Gould, D., Eklund, R.C. and Jackson, S.A. (1992). 1988 US Olympic wrestling excellence:- II thoughts and affect occurring during competition. *The Sport Psychologist*, **6**, 383-402.

Gould, D., Horn, T. and Spreeman, J. (1983). Competitive anxiety in junior elite wrestlers. *Journal of Sport Psychology*, **5**, 58-71.

Gould, D., Jackson, S.A. and Finch, L.M. (1993). Life at the top: the experiences of US national champion figure skaters. *The Sport Psychologist*, **7**, 354-374.

Gould, D., Petlichkoff, L. and Weinberg, R.S. (1984). Antecedents of, temporal changes in and relationships between CSAI-2 subcomponents. *Journal of Sport Psychology*, **6**, 289-304.

Gould, D., Petlichkoff, L., Simons, J. and Vevera, M. (1987). Relationship between competitive state anxiety inventory - 2 subscale scores and pistol shooting performance. *Journal of Sport Psychology*, **9**, 33-42.

Hackfort, D. (1991). Functional attributions to emotions in sports. In *Motivation, Emotion and Stress Vol.1* (edited by J.R. Nitsch and R.Seiler), pp. 143-149. Proceedings of the VIII European Congress of Sport Psychology, Köln.

Hackfort, D. & Spielberger, C.D. (1989). *Anxiety in Sports- An International Perspective*. New York: Hemisphere Publishing Corporation.

Hackfort D. and Schwenkmezger, P. (1989). Measuring anxiety in sports: perspectives and problems. In *Anxiety In Sports- An International Perspective* (edited by D. Hackfort & C.D. Spielberger), pp. 55-76. New York: Hemisphere Publishing Corporation.

Hall, H.K. and Bryne, A.T.J. (1988). Goal setting in sport: clarifying recent anomalies. *Journal of Sport and Exercise Psychology*, **10**, 184-198.

Hamel, J., Dufour, S. and Fortin, D. (1993). *Case Study Methods - Qualitative Research Methods*, Vol 32. Newbury Park, California: SAGE Publications.

Hamilton, V. (1983). *The Cognitive Structures and Processes of Human Motivation and Personality*. Chichester, England: John Wiley & Sons.

Hanin, Y.L. (1980). A study of anxiety in sports. In *Sport Psychology: An Analysis of Athlete Behaviour* (edited by W.F. Straub) New York: Mouvement Publications.

Hanin, Y.L. (1991). Optimising pre-contest anxiety. In *Motivation, Emotion and Stress Vol. 1* (edited by J.R. Nitsch & R.Seiler). Proceedings of the VIII European Congress of Sport Psychology, Köln.

Hardy, L. (1990). A catastrophe model of performance in sport. In *Stress and Performance in Sport* (edited by J.G. Jones & L.Hardy) New York: John Wiley & Sons.

Hardy, L. and Jones, J.G. (1990). Future directions for research into stress in sport. In *Stress and Performance in Sport* (edited by J.G. Jones and L.Hardy) New York: John Wiley & Sons.

Harris, D. and Harris, B. (1984). *The Athletes Guide to Sport Psychology: Mental Links for Physical People*. Champaign, Illinois: Leisure Press.

Heider, F. (1944). Social perception and phenomenal causality. *Psychological Review*, **51**, 358-374.

Henriques, P. (1987). *Balanced Riding - A Way to Find the Correct Seat*. Buckingham, England: The Kenilworth Press Ltd.

Hersen, M and Barlow, D.H. (1976). *Single-Case Experimental Designs: Strategies for Studying Behaviour Change*. New York: Pargman Press.

Hölzel, P and W. (1996). *Learn to Ride Using Sports Psychology*. Buckingham, England: Kenilworth Press.

Hollingsworth, B. (1975). Effects of performance goals and anxiety on learning a gross motor task. *Research Quarterly*, **46**, 2, 162-168.

Houghton, S. (1991). A multi-component intervention with an olympic archer displaying performance related anxiety: a case study. *Behavioural Psychotherapy*, **19**, 289-292.

Houghton-Brown, J. (1995). *Coaching the Rider - Theory and Practice*. Oxford: Blackwell Science.

Imlay, G.J., Carda, R.D., Stanbrough, M.E., Dreiling, A.M. and O'Connor, P.J. (1995). Anxiety and athletic performance: a test of zone of optimum function theory. *International Journal of Sport Psychology*, **26**, 295-306.

Jackson, S.E. and Zedeck, S. (1982). Explaining performance variability: contributions of goal setting, task characteristics and evaluative concerns. *Journal of Applied Psychology*, **67**, 6, 759-768.

Jacobson, E. (1938). *Progressive Relaxation*. Chicago: University Chicago Press.

Jick, T.D. (1979). Mixing qualitative and quantitative methods: triangulation in action. *Administrative Science Quarterly*, **24**, 602-611.

Jones, G. (1991a). Stress and anxiety. In *Sport Psychology: A Self-Help Guide* (edited by S.J. Bull) pp. 31-51. Wiltshire: The Crowood Press.

Jones, J.G. (1991b). Recent developments and current issues in competitive state anxiety research. *The Psychologist; Bulletin of the British Psychological Society*, **4**, 151-155.

Jones, J.G. and Cale, A. (1989). Pre-competition temporal patterning of anxiety and self-confidence in males and females. *Journal of Sport Behaviour*, **12**, 2, 183-193.

Jones, J.G., Cale, A. and Kerwin, D.G. (1988). Multidimensional competitive state anxiety and psychomotor performance. *The American Journal of Science and Medicine in Sport*, **20**, 4, 3-6.

Jones, J.G., Hanton, S. and Swain, A. (1994). Intensity and interpretation of anxiety symptoms in elite and non-elite sports performers. *Personality and Individual Differences*, **17**, 5, 657-663.

Jones, G. and Swain, A. (1992). Intensity and direction as dimensions of competitive state anxiety and relationships with competitiveness. *Perceptual and Motor Skills*, **74**, 467-472.

Jones J.G. and Swain, A. (1995). Predispositions to experience debilitating and facilitative anxiety in elite and non-elite performers. *The Sport Psychologist*, **9**, 201-211.

Jones, J.G., Swain, A. and Cale, A. (1990). Antecedents of multidimensional competitive state anxiety and self-confidence in elite intercollegiate middle distance runners. *The Sport Psychologist*, **4**, 107-118.

Jones, J.G., Swain, A. and Cale, A. (1991). Gender differences in precompetition temporal patterning and antecedents of anxiety and self-confidence. *Journal of Sport and Exercise Psychology*, **13**, 1-15.

Jones, J.G., Swain, A. and Hardy, L. (1993). Intensity and direction dimensions of competitive state anxiety and relationships with performance. *Journal of Sports Sciences*, **11**, 525-532.

Karteroliotis, C. and Gill, D.L. (1987). Temporal Changes in Psychological and Physiological Components of state anxiety. *Journal of Sport Psychology*, **9**, 3, 261-274.

Kazdin, A.E. (1982) *Single-Case Research Designs*. New York: Oxford University Press.

Kelly, G.A. (1963). *A Theory of Personality - The Psychology of Personal Constructs*. New York: WW Norton & Company Inc.

Kennedy, M.M. (1979). Generalising from single case studies. *Evaluation Quarterly*, **3**, 4, 661-678.

Kiley-Worthington, M. (1987). *The Behaviour of Horses*. London: JA Allen.

Kinnear, P.R. and Gray, C.D. (1994). *SPSS for Windows Made Simple*. Hove, UK: Lawrence Erlbaum Associates Publishers.

Kirschenbaum, D., McCann, S., Meyers, A. and Williams, J. (1995). The use of sport psychology to improve sport performance. *Sport Science Exchange - Roundtable, Gatorade Sport Science Institute*, **6**, 2.

Klein, A.M. (1989). Pumping irony: Crisis and contradiction in bodybuilding. *Sociology of Sport Journal*, **3**, 112-133.

Knox, C. (1989). The Adult Amateur Competitor. *USCTA News* **15**, 3, 15-16.

Krane, V. (1993). A practical application of the anxiety-athletic performance relationship: The zone of optimal functioning hypothesis. *The Sport Psychologist*, **7**, 113-126.

Krane, V. (1994). The mental readiness form as a measure of competitive state anxiety. *The Sport Psychologist*, **8**, 189-202.

Krane, V. and Williams, J. (1987). Performance and somatic anxiety, cognitive anxiety and confidence changes prior to competition. *Journal of Sport Behaviour*, **10**, 1, 47-55.

Krane, V. and Williams, J. (1994). Cognitive anxiety, somatic anxiety and confidence in track and field athletes: The impact of gender, competitive level and task characteristics. *International Journal of Sport Psychology*, **25**, 203-217.

Krane, V., Williams, J. and Feltz, D. (1992). Path analysis examining relationships among cognitive anxiety, somatic anxiety and state confidence, performance expectations and golf performance. *Journal of Sport Behaviour*, **15**, 4, 279-295.

Kratochwill, T.R. (1978). *Single Subject Research - Strategies for Evaluating Change*. New York: Academic Press.

Kubstant, T. (1986). *Performing Your Best - A Guide to Psychological Skills for High Achievers*. Champaign, Illinois: Life Enhancement Publications.

Lacey, J.I. (1959). Psychophysiological approaches to the evaluation of psychotherapeutic process and outcome. In *Research in Psychotherapy, Vol. 1*. (edited by E.A. Rubenstein and M.B. Parlott), Washington DC: American Psychological Association.

Landers, D.M. (1980). The arousal-performance relationship revisited. *Research Quarterly for Exercise and Sport*, **51**, 1, 77-90.

Landers, D.M. (1982). Arousal, attention and skilled performance: Further considerations. *Quest*, **33**, 2, 271-283.

Landers, D.M. and Boutcher, (1993). Arousal-performance relationships. In *Applied Sport Psychology - Personal Growth to Peak Performance* (edited by J. Williams), pp. 170-184. Mountain View, California: Mayfield Publishing Company.

Latham, G.P. and Baldes, J.J. (1975). The “practical significance” of Locke’s theory of goal setting. *Journal of Applied Psychology*, **60**, 1, 122-124.

Latham, G.P. and Yukl, G.A. (1975). A review of research on the application of goal setting in organisations. *Academy of Management Journal*, **18**, 4, 824-845.

Lazarus, R.S. (1966). *Psychological Stress and the Coping Process*. New York: McGraw-Hill.

Lazarus, R.S. (1990). Theory-based stress measurement. *Psychological Inquiry*, **1**, 1, 3-13.

Lazarus, R.S., Deese, J. and Osler, S.F. (1952). The effects of psychological stress upon performance. *Psychological Bulletin*, **49**, 4, 293-317.

Lazarus, R.S. and Folkman, S. (1984). *Stress, Appraisal and Coping*. New York: Springer.

Leith, L.M. and Praprevessis, H. (1989) Attributions of causality and dimensionality associated with sport outcomes in objectively evaluated and subjectively evaluated sports. *International Journal of Sport Psychology*, **20**, 224-234.

Levitt, E.E. (1980). *The Psychology of Anxiety*. New Jersey: Lawrence Erlbaum Associates.

Liebert, R.M. and Morris, L.W. (1967). Cognitive and emotional components of test anxiety: A distinction and some initial data. *Psychological Reports*, **20**, 975-978.

Lincoln, Y.S. and Guba, E.G. (1985). *Naturalistic Inquiry*. Beverly Hills: SAGE Publications.

Locke, E.A. (1968). Toward a theory of task motivation and incentives. *Organisational Behaviour and Human Performance*, **3**, 157-189.

Locke, E.A. and Bryan, J.F. (1969). The directing function of goals in task performance. *Organisational Behaviour and Human Performance*, **4**, 35-42.

- Locke, E.A. and Latham, G.P. (1985). The application of goal setting to sports. *Journal of Sport Psychology*, **7**, 205-222.
- Lockhart, K.A. (1990). The Psychology of training Part 3. *Dressage and Combined Training*, **49**, 37-39.
- Mace, R.D. and Carroll, D. (1985). The control of anxiety in sport: stress inoculation training prior to abseiling. *International Journal of Sport Psychology*, **16**, 165-175.
- Mace, R.D., Carroll, D. and Eastman, C. (1986a). Effects of SIT on self-report behavioural and psychophysiological reactions to abseiling. *Journal of Sport Sciences*, **4**, 229-236.
- Mace, R.D., Eastman, C. and Carroll, D. (1986b). Stress inoculation training: a case study in gymnastics. *British Journal of Sports Medicine*, **20**, 3, 139-141.
- Mahoney, M.J. and Avenier, M. (1977). Psychology of the elite athlete: an exploratory study. *Cognitive Therapy and Research*, **1**, 2, 135-141.
- Males, J.R. and Kerr, J.K. (1996). Stress, emotion and performance in elite slalom canoeists. *The Sport Psychologist*, **10**, 17-36.
- Malmö, R.B. (1959). Activation: A neuropsychological dimension. *Psychological Review*, **66**, 6, 367-386.
- Martens, R. (1971). Anxiety and motor behaviour: a review. *Journal of Motor Behaviour*, **3**, 2, 151-179.
- Martens, R. (1972). Trait and state anxiety. In *Ergogenic Aids and Muscular Performance* (edited by W.P Morgan), pp. 35-65. New York: Academic Press.
- Martens, R. (1977). *Sport Competition Anxiety Test*. Champaign, Illinois: Human Kinetics Publishers.
- Martens, R., Burton, D., Rivkin, F. and Simon, J. (1979). Reliability and validity of the competitive state anxiety inventory (CASI). In *Psychology of Motor Behaviour and Sport* (edited by C.H. Nadeau, W.R. Halliwell, K.M. Newell and G.C. Roberts), pp. 91-99. Champaign, Illinois: Human Kinetics.
- Martens, R. and Simon, J. A. (1976). Comparison of three predictors of state anxiety in competitive situations. *Research Quarterly*, **47**, 381-387.
- Martens, R., Vealey, R.S. and Burton, D. (1990). *Competitive Anxiety in Sport*. Champaign, Illinois: Human Kinetics Books.

- Maynard, I.W. and Cotton, P.C.J. (1993). An investigation of two stress-management techniques in a field setting. *The Sport Psychologist*, **7**, 375-387.
- Maynard, I.W. and Howe, B.L. (1987). Interrelations of trait and state anxiety with game performance of rugby players. *Perceptual and Motor Skills*, **64**, 599-602.
- Maynard, I.W., Hemmings, B. and Warwick-Evans, L. (1995). The effects of a somatic intervention strategy on competitive state anxiety and performance in semi-professional soccer players. *The Sport Psychologist*, **9**, 51-64.
- McAuley, E. (1985). State anxiety: antecedent or result of sport performance. *Journal of Sport Behaviour*, **8**, 2, 71-78.
- McAuley, E. (1991). Efficacy, attributional and affective responses to exercise participation. *Journal of Sport and Exercise Psychology*, **13**, 382-393.
- McAuley, E., Duncan, T.E. and Russell, D.W. (1992). Measuring causal attributions: the revised causal dimension scale (CDSII). *Personality and Social Psychology Bulletin*, **18**, 5, 566-573.
- McAuley, E. and Gross, J.B. (1983). Perceptions of causality in sport: an application of the causal dimension scale. *Journal of Sport Psychology*, **5**, 72-76.
- McAuley, E. and Shaffer, S. (1993). Affective responses to externally and personally controllable attributions. *Basic and Applied Social Psychology*, **14**, 4, 475-485.
- McCann, J.S., Heird, J.C., Bell, R.W. and Lutherer, L.O. (1988). Normal and more highly reactive horses - heart rate, respiration rate and behavioural observations. *Applied Animal Behaviour Science*, **19**, 201-214.
- Meichenbaum, D. (1985). *Stress Inoculation Training*. New York: Pergamon Press.
- Meyers, A. (1995). The use of sport psychology to improve sport performance. *Sport Science Exchange - Roundtable, Gatorade Sport Science Institute*, **6**, 2.
- Miller, J.T. and McAuley, E. (1987). Effects of a goal-setting training programme on basketball free-throw self-efficacy and performance. *The Sport Psychologist*, **1**, 103-113.
- Morley, S. and Adams, M. (1989). Some single statistical tests for exploring single case time-series data. *British Journal of Clinical Psychology*, **28**, 1-18.
- Morris, L.W. and Liebert, R.M. (1970). Relationship of cognitive and emotional components of test anxiety to physiological arousal and academic performance. *Journal of Consulting and Clinical Psychology*, **35**, 3, 332-337.

- Morris, L., Davis, D. and Hutchings, C. (1981). Cognitive and emotional components of anxiety: literature review and revised worry-emotionality scale. *Journal of Educational Psychology*, **73**, 541-555.
- Mortimer, M. (1993). *Competition Training for Horse and Rider*. Devon, England: David & Charles.
- Murphy, R.J. and Bryan, A.J. (1980). Multiple baseline and multiple probe designs: practical alternatives for special education assessment and evaluation. *Journal of Special Education*, **14**, 3, 325-335.
- Nideffer, R.M. (1980). The relationships of attention and anxiety to performance. In *Sport Psychology: An Analysis of Athlete Behaviour* (edited by W.F. Straub) New York: Movement Publications.
- Orlick, T. and Partington, J. (1988). Mental links to excellence. *The Sport Psychologist*, **2**, 105-130.
- Oxendine, J.B. (1970). Emotional arousal and motor performance. *Quest*, **13**, 23-30.
- Parfitt, C.G.; Jones, J.G. and Hardy, L. (1990). Multidimensional anxiety and performance. In *Stress and Performance in Sport* (edited by J.G. Jones & L.Hardy) New York: John Wiley & Sons.
- Perreault, B.J. (1991). Stress management. *Dressage and Combined Training*, **59**, August.
- Ravenette, A.T. (1977). PCT: an approach to the psychological investigation of children and young people. In *New Perspectives in Personal Construct Theory* (edited by D.Bannister), pp. 251-280. London: Academic Press.
- Ravey, J. & Scully, D. (1989). The cognitive psychology of sport. In *The Psychology of Sport: Theory and Practice* (edited by J. Kremer & W. Crawford), The BPS Northern Ireland Branch, occasional paper, August, 1989.
- Ravizza, K. (1989). Increasing awareness for sport performance. In *Applied Sport Psychology - Personal Growth to Peak Performance* (edited by J. Williams) Mountain View, California: Mayfield Publishing Company.
- Rees, L. (1984). *The Horses Mind*. London: Stanley Paul.
- Rifá, H. (1990). Social facilitation in the horse (equus caballus). *Applied Animal Behaviour Science*, **25**, 167-176.
- Roberts, G.C. and Pascuzzi, D. (1979). Causal attributions in sport: some theoretical implications. *Journal of Sport Psychology*, **1**, 203-211.

- Robson, C. (1993). *Real World Research; A Resource for Social Scientists and Practitioners-Reserachers*. Oxford: Blackwell.
- Rushall, B.S. (1979). *Psyching for Sport - The Psychological Preparation for Serious Competition in Sport*. London: Pelham Books.
- Russell, D. (1982). The causal dimension scale: a measure of how individual's perceive causes. *Journal of Personality and Social Psychology*, **42**, 6, 1137-1145.
- Russell, D. and McAuley, E. (1986). Causal attributions, causal dimensions and affective reactions to success and failure. *Journal of Personality and Social Psychology*, **50**, 6, 1174-1185.
- Russell, D., McAuley, E. and Tarico, V. (1987). Measuring causal attributions for success and failure: a comparison of methodologies for assessing causal dimensions. *Journal of Personality and Social Psychology*, **52**, 6, 1248-1257.
- Sanderson, F.H. (1989). Analysis of anxiety levels in sport. In *Anxiety in Sports - An International Perspective* (edited by D. Hackfort & C.D. Spielberger), pp. 39-54, New York: Hemisphere Publishing Comporation.
- Sanderson, F.H. and Gilchrist, J. (1982). Anxiety and attributional responses of squash players. *British Journal of Sports Medicine*, **17**, 24-26.
- Sarason, I.G. (1975). Test anxiety, attention and the general problem of anxiety. In *Stress and Anxiety, vol. 1*. (edited by C.D. Spielberger & I.G. Sarason), New York: John Wiley & Sons.
- Scanlan, T.K. (1977). The effects of success-failure on the perception of threat in a competitive situation. *Research Quarterly*, **48**, 145-154.
- Selye, H. (1965). *Stress without Distress*. New York: New American Library.
- Simon, J.A. and Martens, R. (1979). Children's anxiety in sport and non-sport evaluative activities. *Journal of Sport Psychology*, **1**, 160-169.
- Smith, R. (1980). A cognitive-affective stress management approach to training for athletes. In *Psychology of Motor Behaviour and Sport* (edited by H. Nadeau, W.R. Halliwell, K.M. Newell and G.C. Roberts), pp.54-72. Champaign, Illinois: Human Kinetics Publishers.
- Smith, R.E., Smoll, F.L. and Schutz, R.W. (1990). Measurement and correlates of sport - specific cognitive and somatic trait anxiety: the sport anxiety scale. *Anxiety Research*, **2**, 263-280.

Sonstroem, R.J. and Bernardo, P. (1982). Intraindividual pregame state anxiety and basketball performance:- a re-examination of the inverted-U curve. *Journal of Sport Psychology*, 4, 235-245.

Spielberger, C.D. (1966). The effects of anxiety on complex learning and academic achievement. In *Anxiety and Behaviour* (edited by C.D. Spielberger), pp. 361-398, New York: Academic Press.

Spielberger, C.D. (1971). Trait-State Anxiety and Motor Behaviour. *Journal of Motor Behaviour*, 3, 3, 265-279.

Spielberger, C.D. (1975) Anxiety and the state-trait process. In *Stress and Anxiety, Volume 1* (edited by C.D. Spielberger and I.G.Sarason), pp. 115-143. New York: John Wiley & Sons.

Spielberger, C.D. and Sarason, I.G. (1975). *Stress and Anxiety, Vol. 1*. New York: John Wiley & Sons.

Spielberger, C.D., Gorsuch, R.I. and Lushene, R.I. (1970). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA.: Consulting Psychologists.

Suinn, R.M. (1972). Removing emotional obstacles to learning and performance by visuo-motor behaviour rehearsal. *Behavioural Therapy*, 31, 308-310.

Suinn, R.M. (1980) *Psychology in Sports: Methods and Applications*. Minnesota: Burgess Publishing Company.

Swain, A and Jones, G. (1991) Gender role endorsement and competitive anxiety. *International Journal of Sport Psychology*, 22, 50-65.

Swain, A. and Jones, G. (1992) Relationships between sport achievement orientation and competitive state anxiety. *The Sport Psychologist*, 6, 42-54.

Swain, A. and Jones, G. (1993) Intensity and frequency dimensions of competitive state anxiety. *Journal of Sport Sciences*, 11, 533-542.

Taylor, J.A. (1953). A personality scale of manifest anxiety. *The Journal of Abnormal and Social Psychology*, 48, 2, 285-290.

Tennenbaum, G. and Furst, D. (1985). The relationships between sport achievement responsibility, attribution and related situational variables. *International Journal of Sport Psychology*, 16, 254-269.

Tesch, R. (1990). *Qualitative Research Analysis and Software Tools*. New York: Falmer Press.

Vallerand, R. and Richer, F. (1988). On the use of the causal dimension scale in a field setting: a test with confirmatory factor analysis in success and failure situations. *Journal of Personality and Social Psychology*, **54**, 4, 704-712.

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

Walsh, A. (1990). *Statistics for Social Scientists (with Computer Applications)*. London: Harper and Row.

Weinberg, R. (1989). Anxiety, arousal and motor performance; theory, research and applications. In *Anxiety in Sports: An International Perspective* (edited by D. Hackfort & C.D. Spielberger), pp. 95-116, New York: Hemisphere Publishing Corporation.

Weinberg, R., Bruya, L. and Jackson, A. (1985). The effects of goal proximity and goal specificity on endurance performance. *Journal of Sport Psychology*, **7**, 296-305

Weinberg, R., Burton, D., Yukelson, D. and Weigand, D. (1993). Goal setting in competitive sport: an exploratory investigation of practices of college athletes. *The Sport Psychologist*, **7**, 275-289.

Weiner, B. (1972). *Theories of Motivation: From Mechanism to Cognition*. Chicago: Rand McNally.

Weiner, B. (1979). A theory of motivation for some class-room experiences. *Journal of Educational Psychology*, **71**, 3-25.

Weiner, B. (1981). The role of affect in sport psychology. In *Psychology of Motor Behaviour and Sport* (edited by G.C. Roberts and D.M. Landers) Champaign, Illinois: Human Kinetics.

Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review*, **92**, 4, 548-573.

Weiner, B., Russell, D. and Lerman, D. (1979). The cognition-emotion process in achievement related contexts. *Journal of Personality and Social Psychology*, **37**, 7, 1211-1220.

Williams, J. (1995). The use of sport psychology to improve sport performance. *Sport Science Exchange - Roundtable, Gatorade Sport Science Institute*, **6**, 2.

Williams, M. (1991). Relax- Coping with nerves - equine and human. *Horse and Rider*, (1991), September.

Wollman, N. (1986). Research on imagery and motor performance: three methodological suggestions. *Journal of Sport Psychology*, **8**, 135-138,

Yan Lan, L. and Gill, D.L. (1984). The relationships among self-efficacy, stress responses and a cognitive feedback manipulation. *Journal of Sport Psychology*, **6**, 227-238.

Ziegler, S. (1980). An overview of anxiety management strategies in sport. In *An Analysis of Athlete Behaviour* (edited by W.F. Straub), New York: Mouvement Publications.

## CHAPTER 11

### Publications and Communications

## 11.0 Publications and communications.

### *Publications*

Potter, C. (1996). Chapter 7: Rider and Horse Psychology. In *Diploma in Professional Studies (Coaching Studies)*, Leeds, England: National Coaching Foundation. *Submitted for publication.*

### *Communications*

Potter, C. (1992). An investigation into the temporal patterning of pre-competitive anxiety in competitors of British Horse Society Novice horse trials. *Oral communication at the 10th International Scientific Students Conference* of Hungarian University of Physical Education, pp. 84-85, 14-15 May, 1992, Budapest.

Potter, C., Sanderson, F.H. and Murphy, P. (1994). Analysis of multidimensional competitive state anxiety in horse trials. *Oral communication at the Annual Conference of the British Psychological Society*, pp. 78, 24-27 March, 1994, Brighton Centre.

Sanderson, F., Potter, C. and Murphy, P. (1995). Investigation into intensity and direction dimensions of competitive state anxiety and performance in Novice horse trials riders. *Poster communication at the Annual Conference of the British Psychological Society*, pp. 21, 1-4 April, 1995, University of Warwick.

## APPENDIX I - Rider's Perceptions Questionnaire

## RIDER'S PERCEPTIONS QUESTIONNAIRE (RPQ).

Name:- \_\_\_\_\_ (You may leave this blank if you wish, however all questionnaires will be treated with the strictest confidentiality).

Sex (M/F):- \_\_\_\_\_

1) What equestrian sport do you compete in? (e.g. Dressage, Show-jumping etc.):- \_\_\_\_\_

2) How long have you been riding ? (in months and years) \_\_\_\_\_

3) How long have you been competing in your sport ? (in months and years) \_\_\_\_\_

4) What is the highest level of competition you have competed in? \_\_\_\_\_

5) How regularly do you compete in your sport? (Please tick a box)

a) More than once a week

b) Once a week

c) Once every 2-3 weeks

d) Once a month

e) Less than once a month

f) Other: Please specify \_\_\_\_\_

**PLEASE TURN OVER.**

**INSTRUCTIONS:-** Please read the following statements. For each statement circle a category that best describes your feelings about the statements. Do not spend too much time on any one statement. Please answer honestly. The information will help us to understand rider's perceptions regarding equestrian sports. Your answers will be kept strictly confidential. Only group answers will be analysed.

---

---

**FOR THE FOLLOWING STATEMENTS** the categories to choose from are:-

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>never</b>	<b>sometimes</b>	<b>most of the time</b>	<b>always</b>

**Please circle ONE number that best describes your feelings about the statement.**

- |  |   |   |   |   |
|--|---|---|---|---|
| 1) When I expect to do well my horse performs well.  | 1 | 2 | 3 | 4 |
| 2) When I worry about a cross-country fence my horse has problems at it.                               | 1 | 2 | 3 | 4 |
| 3) When I'm feeling excited about riding, my horse becomes frisky.                                     | 1 | 2 | 3 | 4 |
| 4) If I perform poorly then my horse performs poorly.  | 1 | 2 | 3 | 4 |
| 5) If my muscles are tense when I am riding, then I can feel my horse becoming tense as well.          | 1 | 2 | 3 | 4 |
| 6) My horse's temperament affects how I feel when I am riding.   | 1 | 2 | 3 | 4 |
| 7) My confidence increases if I know my horse is capable of doing the job.                             | 1 | 2 | 3 | 4 |
| 8) If I know my horse is not fit enough, I don't expect to do well in a competition.                   | 1 | 2 | 3 | 4 |
| 9) My horse's behaviour directly affects how I feel.   | 1 | 2 | 3 | 4 |
| 10) My performance contributes more to the final outcome of a competition than my horse's performance. | 1 | 2 | 3 | 4 |

**PLEASE TURN OVER.**

11) When I am riding I can feel if my horse is tense. 1 2 3 4

*If you have chosen 2,3 or 4, please can you explain how you can tell that your horse is tense when you are riding* \_\_\_\_\_

---

---

---

---

12) My expectations about my competition performance affect my horse's performance. 1 2 3 4

13) If I'm thinking positively my horse performs well. 1 2 3 4

14) If I am angry during a schooling session, my horse misbehaves. 1 2 3 4

15) When I am riding well, my horse performs well. 1 2 3 4

16) When my horse becomes tense in a schooling session I am concerned that he/she is not working properly. 1 2 3 4

17) My horse's performance contributes more to the final outcome of a competition than my performance. 1 2 3 4

18) When I expect to have trouble at a fence, I do. 1 2 3 4

19) My thoughts affect my horse's performance. 1 2 3 4

20) My horse can sense if I'm nervous. 1 2 3 4

*If you have chosen 2, 3 or 4, please explain how you know that your horse can sense if you are nervous* \_\_\_\_\_

---

---

---

---

21) My horse's performance and my performance contribute an equal amount to the final outcome of a competition. 1 2 3 4

Your age:- \_\_\_\_\_ (This is required for categorisation purposes only)

**PLEASE TURN OVER.**

**FOR THE FOLLOWING STATEMENTS the categories to choose from are:**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>not at all</b>	<b>somewhat</b>	<b>moderately so</b>	<b>very much so</b>

**Please circle ONE number that best describes your feelings about the statement.**

- |  |   |   |   |   |
|--|---|---|---|---|
| 22) When riding out on the roads, if I am nervous I find my horse reacts to the traffic more.            | 1 | 2 | 3 | 4 |
| 23) The mood I am in before competition affects how my horse performs during competition.                | 1 | 2 | 3 | 4 |
| 24) How I ride affects how my horse behaves.   | 1 | 2 | 3 | 4 |
| 25) If my horse is overly excited, then I expect to do less well in competition.                         | 1 | 2 | 3 | 4 |
| 26) Having a horse with a high level of ability can compensate for a poor performance from me.           | 1 | 2 | 3 | 4 |
| 27) When riding a cross-country course, if my horse feels tired I become more concerned.                 | 1 | 2 | 3 | 4 |
| 28) If my horse is misbehaving whilst I am warming up for a competition I do not expect to perform well. | 1 | 2 | 3 | 4 |
| 29) An experienced horse can compensate for a poor rider   | 1 | 2 | 3 | 4 |
| 30) My horse is sensitive to changes in my riding position.  | 1 | 2 | 3 | 4 |
| 31) A bad tempered horse will affect my attitude towards that horse when riding it.                      | 1 | 2 | 3 | 4 |
| 32) Having a horse with a poor jumping ability would affect my expectations for jumping.                 | 1 | 2 | 3 | 4 |
| 33) Having a fit horse raises my expectations for success.   | 1 | 2 | 3 | 4 |
| 34) As my horse becomes more experienced, I expect to become more successful in competition.             | 1 | 2 | 3 | 4 |
| 35) Horse and rider can influence each others behaviour.   | 1 | 2 | 3 | 4 |
| 36) If my horse lacks experience across-country I will worry about the task.                             | 1 | 2 | 3 | 4 |

**THANK YOU FOR YOUR CO-OPERATION.**

## APPENDIX II - Database Questionnaire

ANALYSIS OF ANXIETY AND HORSE TRIALS PERFORMANCE.

INTERVIEW.

NAME:-

DATE:-

AGE:-

SEX:-

ADDRESS:-

TELEPHONE No.:-

CURRENT LEVEL OF COMPETING (N,I,A):-

CODE:-

**PROBLEM INFORMATION:-About the rider.**

1) How many years have you been riding?

2) How many years have you been competing in British Horse Society Horse Trials?

3) Do you compete in any other equestrian spheres?

If yes:-

what?

to what level?

for how many years?

4) Do you compete in any other sports?

If yes:-

what?

to what level?

for how many years?

do you compete seriously or for fun?

5) How competitive do you consider yourself to be?

1	2	3	4
not at all	moderately	very	or indifferent

6) When you compete do you always set out to win?

1	2	3	4
never	sometimes	often	always

7) Do you take part in a competition for fun and enjoyment?

1	2	3	4
never	sometimes	often	always

8) When competing do you feel you have sufficient motivation to succeed?

1	2	3	4
never	sometimes	often	always

9) Is the prize money the only incentive for you to compete?

Yes/No

If no what other incentives are there?

10) Do you consider yourself to worry about things in general?

Yes/No/Sometimes

If yes or sometimes:- please give details/examples:

11) Do you feel nervous prior to any sporting competition?

Yes/No/Sometimes (ask for details)

12a) Do you feel nervous prior to a Horse Trial?

Yes/No/Sometimes (if no go to 13)

b) If yes or sometimes:- is this nervousness more than that felt in any other sporting competition?

Yes/No/Sometimes

c) If yes or sometimes:- what do you think are the reasons why you feel nervous before a Horse Trial?

13) Can you briefly describe the feelings you encounter prior to each phase of the Horse

Trial:- e.g. worry,  
nervousness,  
excitement,  
happiness,  
tension.

Dressage:-

Show-jumping:-

Cross-country:-

14a) Which is your most preferred phase?

b) Which is your least preferred phase?

15) Are there any physical bodily sensations you experience prior to each phase as a result of nervousness?

e.g. sweating  
heavy breathing

Yes/No/Sometimes

If yes or sometimes:- please give details:-

16) Prior to competing, does your attention wander?

1	2	3	4
never	sometimes	often	always

17) Do you lack concentration to the task in hand when you are competing?

1	2	3	4
never	sometimes	often	always

18) Do you feel confident before sports competitions in general?

1	2	3	4
never	sometimes	often	always

19) Do you feel confident before a one day Horse Trial?

1	2	3	4
never	sometimes	often	always

20) When you obtain a high dressage mark (poor performance) how does this affect your self-confidence for the rest of the Horse Trial?

21) When you obtain a low dressage mark (good performance) how does this affect your self-confidence for the rest of the Horse Trial?

22) When you do not compete as well as you had hoped, what do you think are the main reasons for this?

e.g. difficulty of the course  
standard of the event too high  
for you and/or the horse  
you were unlucky  
lack of effort or motivation  
weather conditions were bad

23) When you are successful at a Horse Trial what do you think are the main reasons for this result?

e.g. horse and rider ability was good  
conscientious, dedicated training paid off  
fluke success or luck  
weather conditions were good  
you were well prepared

24) Do you have a daytime or evening job?

Yes/No

If yes:- what?

25) Are you sponsored for competing in Horse Trials?

Yes/No

If yes:- please give details:-

26) Do you understand the meaning of the term 'goal-setting'?

Yes/No

If yes, go to 27)

If no, explain (using set definition), then go to 27)

A method by which your aims and objectives for a certain period of time are clearly set out.

27) Do you use 'goal-setting' when competing in Horse Trials?

Yes/No/Sometimes

If yes or sometimes, please give details.

28) Do you understand the meaning of the term 'mental rehearsal' or 'mental imagery'?

Yes/No

If yes, go to 29)

If no, explain (using set definition), then go to 28)

A method by which athletes can perform in their minds a successful performance.

29) Do you use any of these techniques prior to competing in a Horse Trials (or any sport)?

Yes/No/Sometimes

If yes or sometimes, please give details.

30) Are you superstitious when competing in a Horse Trial?  
Yes/No/Sometimes  
If yes or sometimes, please give details.

31) Do you have any external pressures when competing in a Horse Trial?  
e.g. Sponsors, parents etc....  
Yes/No/Sometimes  
If yes or sometimes, please give details.

APPENDIX III - Competitive State Anxiety Inventory - 2 (CSAI-2,  
Martens et al., 1990).

COMPETITIVE STATE ANXIETY INVENTORY - 2

NAME: \_\_\_\_\_ SEX: M/F CONDITION: \_\_\_\_\_

**DIRECTIONS:** A number of statements which sportsmen have used to describe their feelings before competition are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate **HOW YOU FEEL RIGHT NOW** - at this moment. There are no right or wrong answers. Do not spend too much time on any one statement, but choose the answer that describes your feelings right now.

---

	not at all	somewhat	moderately so	very much so
1. I am concerned about this competition	1	2	3	4
2. I feel nervous	1	2	3	4
3. I feel at ease	1	2	3	4
4. I have self-doubts	1	2	3	4
5. I feel jittery	1	2	3	4
6. I feel comfortable	1	2	3	4
7. I am concerned that I may not do as well in this event as I could	1	2	3	4
8. My body feels tense	1	2	3	4
9. I feel self-confident	1	2	3	4
10. I am concerned about not being placed	1	2	3	4
11. I feel tense in my stomach	1	2	3	4
12. I feel secure	1	2	3	4
13. I am concerned about choking under pressure	1	2	3	4
14. My body feels relaxed	1	2	3	4
15. I'm confident I can meet the challenge	1	2	3	4
16. I'm concerned about performing poorly	1	2	3	4
17. My heart is racing	1	2	3	4
18. I'm confident about performing well	1	2	3	4
19. I'm worried about reaching my goal	1	2	3	4
20. I feel my stomach sinking	1	2	3	4
21. I feel mentally relaxed	1	2	3	4
22. I'm concerned that others will be disappointed with my performance	1	2	3	4
23. My hands are clammy	1	2	3	4
24. I'm confident because I mentally picture myself reaching my goal	1	2	3	4
25. I'm concerned I won't be able to concentrate	1	2	3	4
26. My body feels tight	1	2	3	4
27. I'm confident of coming through under pressure	1	2	3	4

---

APPENDIX IV - Questionnaire Booklet for Sections 5.5 and 5.6

Centre for Sport and Exercise Sciences,  
Liverpool John Moores University,  
Mountford Building,  
Byrom Street,  
Liverpool.  
L3 3AF.  
Tel :- 051 231 2157 (daytime)

12th May, 1994.

Dear Competitor,

**Re:- Research project into Emotions and Horse Trials Performance.**

Thank you very much for agreeing to participate in this research project. The information obtained will enable me to evaluate the emotions experienced by Event riders' and assess how they affect performance in Horse Trials.

Please could you complete the booklet (There is an instruction page at the front), and then return it to me here at Weston Park Horse Trials or to the Secretary. If you are unable to do this, please return it to me by post in the addressed envelope provided.

**It is important that you return the booklets whether they are complete or only partly complete.**

I am very grateful for all your help and co-operation.

Thank you very much.

Yours faithfully,



Clare Potter.  
Bsc (HONS) Sport Science.  
Project Researcher



Prof. F.H. Sanderson  
Project Supervisor.

**RESEARCH PROJECT**  
**QUESTIONNAIRE BOOKLET**

CLARE POTTER  
CENTRE FOR SPORT AND EXERCISE SCIENCES,  
LIVERPOOL JOHN MOORES UNIVERSITY,  
LIVERPOOL.  
SPRING 1994.

## INSTRUCTIONS.

Please work through the booklet as follows:-

1. Complete Sections 1 and 2.
2. Section 3 may be completed throughout the day.
3. Complete questionnaire (1) 1/2 an hour before the **Dressage phase** (*please complete as close to 1/2 hour before as is practical for you*).  
**Record the time** at which you fill out the questionnaire in the space provided at the top of the sheet.
4. Complete questionnaire (2) 1/2 an hour before the **Show-jumping phase** (*please complete as close to 1/2 hour before as is practical for you*).  
**Record the time** at which you fill out the questionnaire in the space provided at the top of the sheet.
5. Complete questionnaire (3) 1/2 an hour before the **Cross-country phase** (*please complete as close to 1/2 hour before as is practical for you*).  
**Record the time** at which you fill out the questionnaire in the space provided at the top of the sheet.
6. Complete questionnaire (4) 1 hour after you have finished the event.  
(*please complete as close to 1 hour after as is practical for you*).  
**Record the time** at which you fill out the questionnaire in the space provided at the top of the sheet.
7. Complete Section 4 after you have finished the event and after completing Section 3.

**Thank you for helping with this research project,**

**Clare Potter.**   
**Bsc (HONS) Sport Science.**

**SCORE SHEET**

**Section 1.**

**Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Event:** \_\_\_\_\_

**Level of Competition (N,I,A etc...) :** \_\_\_\_\_

**Highest current level you compete at (N, I, A etc...):** \_\_\_\_\_

---

---

**Section 2.**

Have you set yourself a goal or target for the **Dressage** phase?      Yes / No (please circle)

If yes:- please give details of the goal you hope to achieve.

Have you set a goal or target for the **Show-jumping** phase?      Yes / No (please circle)

If yes:- please give details of the goal you hope to achieve.

Have you set a goal or target for the **Cross-country** phase?      Yes / No (please circle)

If yes:- please give details of the goal you hope to achieve.

---

---

**Section 3.      Score Table.**

Section	Number	Penalty Score				Tot. Penalty Score	Position
		D	SJ	XC	XCT		

(1)

COMPETITIVE STATE ANXIETY INVENTORY - 2

NAME \_\_\_\_\_ SEX: M/F CONDITION: 1/2 hour before Dressage.

**DIRECTIONS:** A number of statements which sports participants have used to describe their feelings before competition are given below. The answers are divided into 2 sections. Read each statement and then circle the appropriate number on the scale from 1 to 4 to indicate **HOW YOU FEEL RIGHT NOW** - at this moment. Then, for each statement, **ALSO** circle an appropriate number on the corresponding scale from -3 to 3 to signify whether you regard your response to be beneficial or detrimental to your performance. Do not spend too much time on any one question. There are no right or wrong answers.

TIME:- _____	HOW YOU FEEL RIGHT NOW				EFFECT ON PERFORMANCE						
	not at all	some-what	moder-ately so	very much so	very detrimental	very beneficial.					
1. I am concerned about this competition	1	2	3	4	-3	-2	-1	0	1	2	3
2. I feel nervous	1	2	3	4	-3	-2	-1	0	1	2	3
3. I feel at ease	1	2	3	4	-3	-2	-1	0	1	2	3
4. I have self-doubts	1	2	3	4	-3	-2	-1	0	1	2	3
5. I feel jittery	1	2	3	4	-3	-2	-1	0	1	2	3
6. I feel comfortable	1	2	3	4	-3	-2	-1	0	1	2	3
7. I am concerned that I may not do as well in this event as I could	1	2	3	4	-3	-2	-1	0	1	2	3
8. My body feels tense	1	2	3	4	-3	-2	-1	0	1	2	3
9. I feel self-confident	1	2	3	4	-3	-2	-1	0	1	2	3
10. I am concerned about not being placed	1	2	3	4	-3	-2	-1	0	1	2	3
11. I feel tense in my stomach	1	2	3	4	-3	-2	-1	0	1	2	3
12. I feel secure	1	2	3	4	-3	-2	-1	0	1	2	3
13. I am concerned about choking under pressure	1	2	3	4	-3	-2	-1	0	1	2	3
14. My body feels relaxed	1	2	3	4	-3	-2	-1	0	1	2	3
15. I'm confident I can meet the challenge	1	2	3	4	-3	-2	-1	0	1	2	3
16. I'm concerned about performing poorly	1	2	3	4	-3	-2	-1	0	1	2	3
17. My heart is racing	1	2	3	4	-3	-2	-1	0	1	2	3
18. I'm confident about performing well	1	2	3	4	-3	-2	-1	0	1	2	3
19. I'm worried about reaching my goal	1	2	3	4	-3	-2	-1	0	1	2	3
20. I feel my stomach sinking	1	2	3	4	-3	-2	-1	0	1	2	3
21. I feel mentally relaxed	1	2	3	4	-3	-2	-1	0	1	2	3
22. I'm concerned that others will be disappointed with my performance	1	2	3	4	-3	-2	-1	0	1	2	3
23. My hands are clammy	1	2	3	4	-3	-2	-1	0	1	2	3
24. I'm confident because I mentally picture myself reaching my goal	1	2	3	4	-3	-2	-1	0	1	2	3
25. I'm concerned I won't be able to concentrate	1	2	3	4	-3	-2	-1	0	1	2	3
26. My body feels tight	1	2	3	4	-3	-2	-1	0	1	2	3
27. I'm confident of coming through under pressure	1	2	3	4	-3	-2	-1	0	1	2	3

COMPETITIVE STATE ANXIETY INVENTORY - 2

NAME \_\_\_\_\_ SEX: M/F CONDITION: 1/2 hour before Show-jumping.

**DIRECTIONS:** A number of statements which sports participants have used to describe their feelings before competition are given below. The answers are divided into 2 sections. Read each statement and then circle the appropriate number on the scale from 1 to 4 to indicate **HOW YOU FEEL RIGHT NOW** - at this moment. Then, for each statement, **ALSO** circle an appropriate number on the corresponding scale from -3 to 3 to signify whether you regard your response to be beneficial or detrimental to your performance. Do not spend too much time on any one question. There are no right or wrong answers.

TIME:- \_\_\_\_\_

	HOW YOU FEEL RIGHT NOW				EFFECT ON PERFORMANCE						
	not at all	some-what	moder-ately so	very much so	very detrimental	0	1	2	3	very beneficial	
1. I am concerned about this competition	1	2	3	4	-3	-2	-1	0	1	2	3
2. I feel nervous	1	2	3	4	-3	-2	-1	0	1	2	3
3. I feel at ease	1	2	3	4	-3	-2	-1	0	1	2	3
4. I have self-doubts	1	2	3	4	-3	-2	-1	0	1	2	3
5. I feel jittery	1	2	3	4	-3	-2	-1	0	1	2	3
6. I feel comfortable	1	2	3	4	-3	-2	-1	0	1	2	3
7. I am concerned that I may not do as well in this event as I could	1	2	3	4	-3	-2	-1	0	1	2	3
8. My body feels tense	1	2	3	4	-3	-2	-1	0	1	2	3
9. I feel self-confident	1	2	3	4	-3	-2	-1	0	1	2	3
10. I am concerned about not being placed	1	2	3	4	-3	-2	-1	0	1	2	3
11. I feel tense in my stomach	1	2	3	4	-3	-2	-1	0	1	2	3
12. I feel secure	1	2	3	4	-3	-2	-1	0	1	2	3
13. I am concerned about choking under pressure	1	2	3	4	-3	-2	-1	0	1	2	3
14. My body feels relaxed	1	2	3	4	-3	-2	-1	0	1	2	3
15. I'm confident I can meet the challenge	1	2	3	4	-3	-2	-1	0	1	2	3
16. I'm concerned about performing poorly	1	2	3	4	-3	-2	-1	0	1	2	3
17. My heart is racing	1	2	3	4	-3	-2	-1	0	1	2	3
18. I'm confident about performing well	1	2	3	4	-3	-2	-1	0	1	2	3
19. I'm worried about reaching my goal	1	2	3	4	-3	-2	-1	0	1	2	3
20. I feel my stomach sinking	1	2	3	4	-3	-2	-1	0	1	2	3
21. I feel mentally relaxed	1	2	3	4	-3	-2	-1	0	1	2	3
22. I'm concerned that others will be disappointed with my performance	1	2	3	4	-3	-2	-1	0	1	2	3
23. My hands are clammy	1	2	3	4	-3	-2	-1	0	1	2	3
24. I'm confident because I mentally picture myself reaching my goal	1	2	3	4	-3	-2	-1	0	1	2	3
25. I'm concerned I won't be able to concentrate	1	2	3	4	-3	-2	-1	0	1	2	3
26. My body feels tight	1	2	3	4	-3	-2	-1	0	1	2	3
27. I'm confident of coming through under pressure	1	2	3	4	-3	-2	-1	0	1	2	3

COMPETITIVE STATE ANXIETY INVENTORY - 2

NAME \_\_\_\_\_

SEX: M/F

CONDITION: 1/2 hour before Cross-Country.

**DIRECTIONS:** A number of statements which sports participants have used to describe their feelings before competition are given below. The answers are divided into 2 sections. Read each statement and then circle the appropriate number on the scale from 1 to 4 to indicate **HOW YOU FEEL RIGHT NOW** - at this moment. Then, for each statement, **ALSO** circle an appropriate number on the corresponding scale from -3 to 3 to signify whether you regard your response to be beneficial or detrimental to your performance. Do not spend too much time on any one question. There are no right or wrong answers.

TIME:- _____	HOW YOU FEEL RIGHT NOW				EFFECT ON PERFORMANCE						
	not at all	some-what	moder-ately so	very much so	-3	-2	-1	0	1	2	3
1. I am concerned about this competition	1	2	3	4	-3	-2	-1	0	1	2	3
2. I feel nervous	1	2	3	4	-3	-2	-1	0	1	2	3
3. I feel at ease	1	2	3	4	-3	-2	-1	0	1	2	3
4. I have self-doubts	1	2	3	4	-3	-2	-1	0	1	2	3
5. I feel jittery	1	2	3	4	-3	-2	-1	0	1	2	3
6. I feel comfortable	1	2	3	4	-3	-2	-1	0	1	2	3
7. I am concerned that I may not do as well in this event as I could	1	2	3	4	-3	-2	-1	0	1	2	3
8. My body feels tense	1	2	3	4	-3	-2	-1	0	1	2	3
9. I feel self-confident	1	2	3	4	-3	-2	-1	0	1	2	3
10. I am concerned about not being placed	1	2	3	4	-3	-2	-1	0	1	2	3
11. I feel tense in my stomach	1	2	3	4	-3	-2	-1	0	1	2	3
12. I feel secure	1	2	3	4	-3	-2	-1	0	1	2	3
13. I am concerned about choking under pressure	1	2	3	4	-3	-2	-1	0	1	2	3
14. My body feels relaxed	1	2	3	4	-3	-2	-1	0	1	2	3
15. I'm confident I can meet the challenge	1	2	3	4	-3	-2	-1	0	1	2	3
16. I'm concerned about performing poorly	1	2	3	4	-3	-2	-1	0	1	2	3
17. My heart is racing	1	2	3	4	-3	-2	-1	0	1	2	3
18. I'm confident about performing well	1	2	3	4	-3	-2	-1	0	1	2	3
19. I'm worried about reaching my goal	1	2	3	4	-3	-2	-1	0	1	2	3
20. I feel my stomach sinking	1	2	3	4	-3	-2	-1	0	1	2	3
21. I feel mentally relaxed	1	2	3	4	-3	-2	-1	0	1	2	3
22. I'm concerned that others will be disappointed with my performance	1	2	3	4	-3	-2	-1	0	1	2	3
23. My hands are clammy	1	2	3	4	-3	-2	-1	0	1	2	3
24. I'm confident because I mentally picture myself reaching my goal	1	2	3	4	-3	-2	-1	0	1	2	3
25. I'm concerned I won't be able to concentrate	1	2	3	4	-3	-2	-1	0	1	2	3
26. My body feels tight	1	2	3	4	-3	-2	-1	0	1	2	3
27. I'm confident of coming through under pressure	1	2	3	4	-3	-2	-1	0	1	2	3

(4)

COMPETITIVE STATE ANXIETY INVENTORY - 2

NAME \_\_\_\_\_

SEX: M/F

CONDITION: After Event

**DIRECTIONS:** A number of statements which sports participants have used to describe their feelings before competition are given below. The answers are divided into 2 sections. Read each statement and then circle the appropriate number on the scale from 1 to 4 to indicate **HOW YOU FEEL RIGHT NOW** - at this moment. Then, for each statement, **ALSO** circle an appropriate number on the corresponding scale from -3 to 3 to signify whether you regard your response to be beneficial or detrimental to your performance. Do not spend too much time on any one question. There are no right or wrong answers.

TIME:- \_\_\_\_\_

	HOW YOU FEEL RIGHT NOW				EFFECT ON PERFORMANCE						
	not at all	some-what	moder-ately so	very much so	very detri-mental	very bene-ficial.					
1. I am concerned about this competition	1	2	3	4	-3	-2	-1	0	1	2	3
2. I feel nervous	1	2	3	4	-3	-2	-1	0	1	2	3
3. I feel at ease	1	2	3	4	-3	-2	-1	0	1	2	3
4. I have self-doubts	1	2	3	4	-3	-2	-1	0	1	2	3
5. I feel jittery	1	2	3	4	-3	-2	-1	0	1	2	3
6. I feel comfortable	1	2	3	4	-3	-2	-1	0	1	2	3
7. I am concerned that I may not do as well in this event as I could	1	2	3	4	-3	-2	-1	0	1	2	3
8. My body feels tense	1	2	3	4	-3	-2	-1	0	1	2	3
9. I feel self-confident	1	2	3	4	-3	-2	-1	0	1	2	3
10. I am concerned about not being placed	1	2	3	4	-3	-2	-1	0	1	2	3
11. I feel tense in my stomach	1	2	3	4	-3	-2	-1	0	1	2	3
12. I feel secure	1	2	3	4	-3	-2	-1	0	1	2	3
13. I am concerned about choking under pressure	1	2	3	4	-3	-2	-1	0	1	2	3
14. My body feels relaxed	1	2	3	4	-3	-2	-1	0	1	2	3
15. I'm confident I can meet the challenge	1	2	3	4	-3	-2	-1	0	1	2	3
16. I'm concerned about performing poorly	1	2	3	4	-3	-2	-1	0	1	2	3
17. My heart is racing	1	2	3	4	-3	-2	-1	0	1	2	3
18. I'm confident about performing well	1	2	3	4	-3	-2	-1	0	1	2	3
19. I'm worried about reaching my goal	1	2	3	4	-3	-2	-1	0	1	2	3
20. I feel my stomach sinking	1	2	3	4	-3	-2	-1	0	1	2	3
21. I feel mentally relaxed	1	2	3	4	-3	-2	-1	0	1	2	3
22. I'm concerned that others will be disappointed with my performance	1	2	3	4	-3	-2	-1	0	1	2	3
23. My hands are clammy	1	2	3	4	-3	-2	-1	0	1	2	3
24. I'm confident because I mentally picture myself reaching my goal	1	2	3	4	-3	-2	-1	0	1	2	3
25. I'm concerned I won't be able to concentrate	1	2	3	4	-3	-2	-1	0	1	2	3
26. My body feels tight	1	2	3	4	-3	-2	-1	0	1	2	3
27. I'm confident of coming through under pressure	1	2	3	4	-3	-2	-1	0	1	2	3

**SCORE SHEET - Evaluation.**

**Section 4.**

Did you achieve the goal that you had set yourself for the **Dressage** phase?  
(please circle)

1	2	3	4
not at all	somewhat	moderately so	very much so

*Please give details:*

Did you achieve the goal that you had set yourself for the **Show-jumping** phase?  
(please circle)

1	2	3	4
not at all	somewhat	moderately so	very much so

*Please give details:*

Did you achieve the goal that you had set yourself for the **Cross-country** phase?  
(please circle)

1	2	3	4
not at all	somewhat	moderately so	very much so

*Please give details:*

---

**How successful do you feel you were in this Horse Trial?** (please circle)

1	2	3	4
not at all successful	somewhat successful	moderately successful	very successful

**Please give details:**

## APPENDIX V - Pre-Event Questionnaire

Pre-Event Questionnaire.

Time of competition:-

About the last few weeks.

1. How do you feel you have been performing in training during the last four weeks?

Extremely Poorly									Extremely Well
1	2	3	4	5	6	7	8	9	

2. How do you feel your horse has been performing in training in the last four weeks?

Extremely Poorly									Extremely Well
1	2	3	4	5	6	7	8	9	

3. How do you feel you have been performing in Horse Trials over the last four weeks?

Extremely Poorly									Extremely Well
1	2	3	4	5	6	7	8	9	

4. How do you feel your horse has been performing in Horse Trials over the last four weeks?

Extremely Poorly									Extremely Well
1	2	3	4	5	6	7	8	9	

5. How do you feel your "trainer" has influenced your performance over the last four weeks?  
( "trainer" can include parents or friends or anyone you consider helps you train).

Very Negatively									Very Positively
1	2	3	4	5	6	7	8	9	

The last Horse Trial.

6. How did you feel about your position in the last Horse Trial?

Extremely Disappointed									Extremely Pleased
1	2	3	4	5	6	7	8	9	

Section 4 continued...

7. How did your position relate to your pre-event expectations?

Very Negatively									Very Positively
1	2	3	4	5	6	7	8	9	

8. How did you feel about your performance in the last Horse Trial?

Extremely Disappointed									Extremely Pleased
1	2	3	4	5	6	7	8	9	

9. How did you feel about your horses performance in the last Horse Trial?

Extremely Disappointed									Extremely Pleased
1	2	3	4	5	6	7	8	9	

10. How did your performance relate to your pre-event expectations?

Very Negatively									Very Positively
1	2	3	4	5	6	7	8	9	

11. How did your horses performance relate to your pre-event expectations?

Very Negatively									Very Positively
1	2	3	4	5	6	7	8	9	

12. How do you feel your "trainer" influenced the result of your last Horse Trial?

Very Negatively									Very Positively
1	2	3	4	5	6	7	8	9	

The next event.

13. How important is it for you to do well in this Horse Trial?

Not at all									Extremely
1	2	3	4	5	6	7	8	9	

Section 4 continued...

Have you set yourself a position goal for this next Horse Trial? Yes/No

14. To what degree do you think that you can achieve this goal?

Definitely No									Definitely Yes
1	2	3	4	5	6	7	8	9	

15. How difficult do you think it will be to achieve this goal?

Extremely Easy									Extremely Difficult
1	2	3	4	5	6	7	8	9	

Have you set yourself a performance goal for this Horse Trial? Yes/No

16. To what extent do you think you can achieve this goal?

Definitely No									Definitely Yes
1	2	3	4	5	6	7	8	9	

17. How difficult do you think it will be to achieve this goal?

Extremely Easy									Extremely Difficult
1	2	3	4	5	6	7	8	9	

18. How do you feel you are riding at the moment?

Extremely Poorly									Extremely Well
1	2	3	4	5	6	7	8	9	

19. How do you feel your horse is performing at the moment?

Extremely Poorly									Extremely Well
1	2	3	4	5	6	7	8	9	

20. How fatigued do you feel at the moment?

Not at all									Extremely
1	2	3	4	5	6	7	8	9	



APPENDIX VI - Causal Dimension Scale II (CDSII; McAuley et al.,  
1992).

## Causal Dimension Scale - II (CDS-II)

**Instructions:-** Following the completion of the competition identify the primary cause for your result. Record this in the space provided.

**Primary reason for result:**

---

---

---

**Instructions:-** Think about the reason you have written above. The items below concern your impressions or opinions of this cause of your performance. Circle one number for each of the following questions.

Is the cause something:

- |  |   |   |   |   |   |   |   |   |   |                                     |
|--|---|---|---|---|---|---|---|---|---|-------------------------------------|
| 1. That reflects an aspect of yourself | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | reflects an aspect of the situation |
| 2. Manageable by you                   | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | not manageable by you               |
| 3. Permanent                           | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | temporary                           |
| 4. You can regulate                    | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | you cannot regulate                 |
| 5. Over which others have control      | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | over which others have no control   |
| 6. Inside of you                       | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | outside of you                      |
| 7. Stable over time                    | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | variable over time                  |
| 8. Under the power of other people     | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | not under the power of other people |
| 9. Something about you                 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | something about others              |
| 10. Over which you have power          | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | over which you have no power        |
| 11. Unchangeable                       | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | changeable                          |
| 12. Other people can regulate          | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | other people cannot regulate        |
-

APPENDIX VII - Instructions to reduce social desirability for  
questionnaires (Martens et al., 1990).

## INSTRUCTIONS.

The effects of highly competitive sports can be powerful and very different among athletes. The questionnaire you are about to complete measures how you feel about this competition at the moment you are responding. Please complete the questionnaire as honestly as you can. Sometimes athletes feel they should not admit to any nervousness, anxiety or worry they experience before competition because this is undesirable. Actually, these feelings are quite common, and to help us understand them we want you to share your feelings with us candidly. If you are worried about the competition or have butterflies or other feelings that you know are signs of anxiety, please indicate these feelings accurately on the inventory. Equally, if you feel calm and relaxed, indicate those feelings as accurately as you can. Your answers will not be shared with anyone. We will be looking for group responses.

APPENDIX VIII - Sport Anxiety Scale (SAS; Smith, Smoll & Schutz,  
1990).

SPORT ANXIETY SCALE - Reactions to competition.

A number of statements which athletes have used to describe their thoughts and feelings before of during a competition are listed below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you usually feel prior to or during competition. Some athletes feel they should not admit to feelings of nervousness of worry, but such reactions are actually quite common, even among professional athletes. To help us better understand reactions to competition, we ask you to share your true reactions with us. There are, therefore, no right or wrong answers. Do not spend too much time on any one statement, but choose the answer that describes how you commonly react.

	not at all	some what	moderately so	very much so
<hr/>				
1. I feel nervous .....	1	2	3	4
2. During competition, I find myself thinking about unrelated things .....	1	2	3	4
3. I have self-doubts .....	1	2	3	4
4. My body feels tense .....	1	2	3	4
5. I am concerned that I may not do as well in this competition as I could .....	1	2	3	4
6. My mind wanders during sport competition .....	1	2	3	4
7. While performing, I often do not pay attention to whats going on .....	1	2	3	4
8. I feel tense in my stomach .....	1	2	3	4
9. Thoughts of doing poorly interfere with my concentration during competition .....	1	2	3	4
10. I am concerned about choking under pressure .....	1	2	3	4
11. My heart races .....	1	2	3	4
12. I feel my stomach sinking .....	1	2	3	4
13. I'm concerned about performing poorly .....	1	2	3	4
14. I have lapses in concentration because of nervousness .....	1	2	3	4
15. I sometimes find myself trembling before of during a competitive event.	1	2	3	4
16. I'm worried about reaching my goal .....	1	2	3	4
17. My body feels tight .....	1	2	3	4
18. I'm concerned that others will be disappointed with my performance ....	1	2	3	4
19. My stomach gets upset before or during competition .....	1	2	3	4
20. I'm concerned I won't be able to concentrate .....	1	2	3	4
21. My heart pounds before competition .....	1	2	3	4

## APPENDIX IX - SMIP Semi-structured interview schedule

## Mental Training Intervention Study - Schedule

This meeting is to discuss the methods and techniques you use to prepare for a one day horse trial. It will involve your perceptions of the event, the tasks you undertake throughout your preparation and your thoughts and feelings associated with these.

Initially I will ask you some general questions regarding yourself, your horse and your participation in the event. After this we will discuss some of the major areas of one day horse trials; for example, training, pre-competition, competition, external pressures and others. I have a list of topics for us to discuss and I will guide you through these throughout our conversation. Do not feel limited by any of the questions I ask you and please use examples to illustrate points if you wish. I will leave the tape recorder running and I may also take notes. Our conversation will be strictly confidential and only I will listen to the tape.

General questions.

*( Semi-structured format - interviewer can alter order of questions and ask for more information as required).*

About yourself:-

- 1) How old are you?
- 2) When did you first start riding?
- 3) How long have you been competing in BHS one day horse trials?
- 4) What is your current highest level of competing?
- 5) Do you compete in any other equestrian sports? what, what level, how long?
- 6) Do you compete in any other sports? what, what level, how long, for fun?
- 7) Which is your favourite discipline of a horse trial? why, least favourite, why?
- 8) How would you describe your temperament?
- 9) Do you have a full time job? - with horses?

\*\*\*\*\*

About your horse:-

- 1) How old is your horse?
- 2) How long has your horse been competing in BHS horse trials?
- 3) How experienced do you consider your horse to be?
- 4) Which phase do you consider your horse to be best at? worst at?, give details.

**WHY?**

**HOW?**

**DEPTH**

**RICHNESS**

## Planning the season:-

1) Please can you explain how you plan your horse trials season and how you decide what events to enter.

Criteria for events:  
difficulty, location,  
travel, ~~accommodation~~.

Classes chosen-

Starting fee

Prize Scale

Cost of events

different prices

Goal setting:

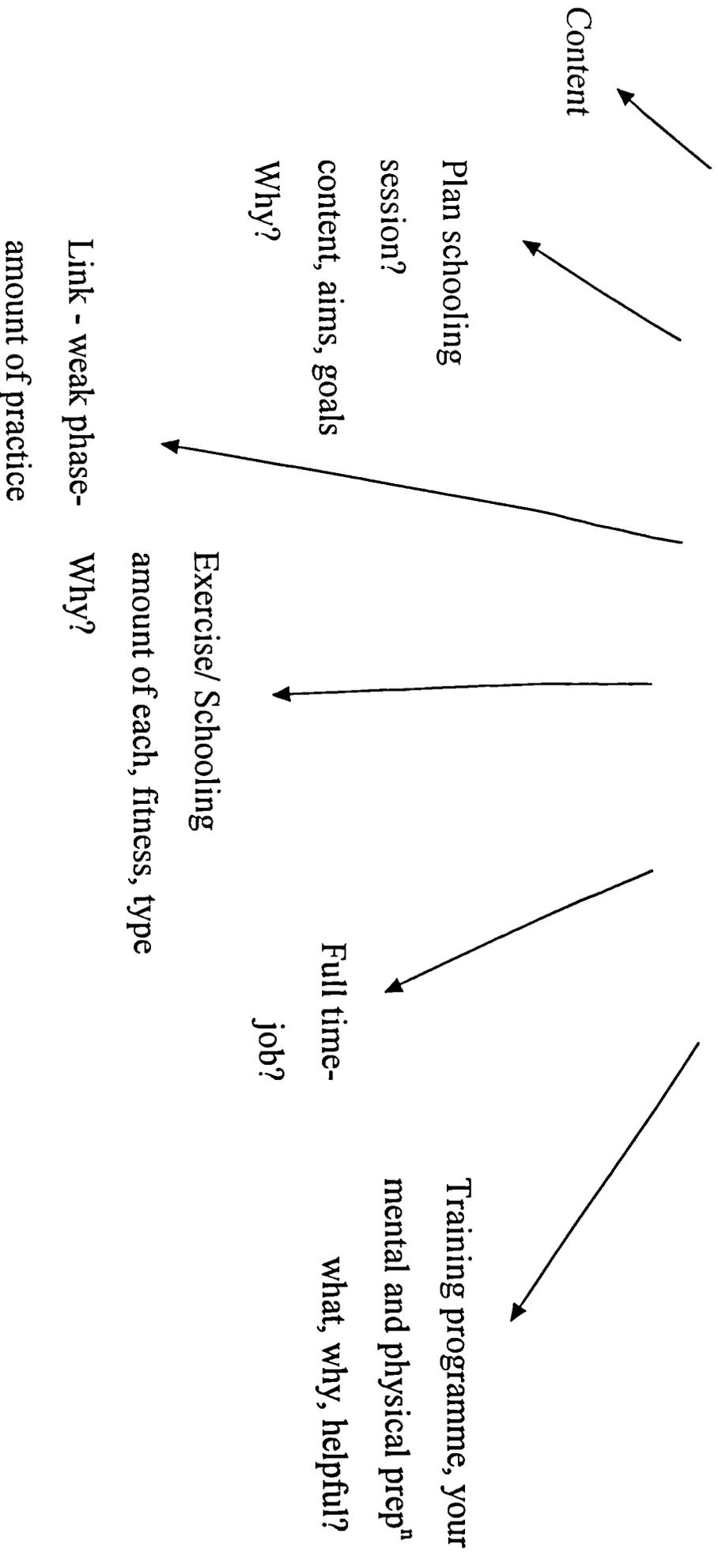
long term etc...

Secondary  
plan? - ballot

criteria influence goals?

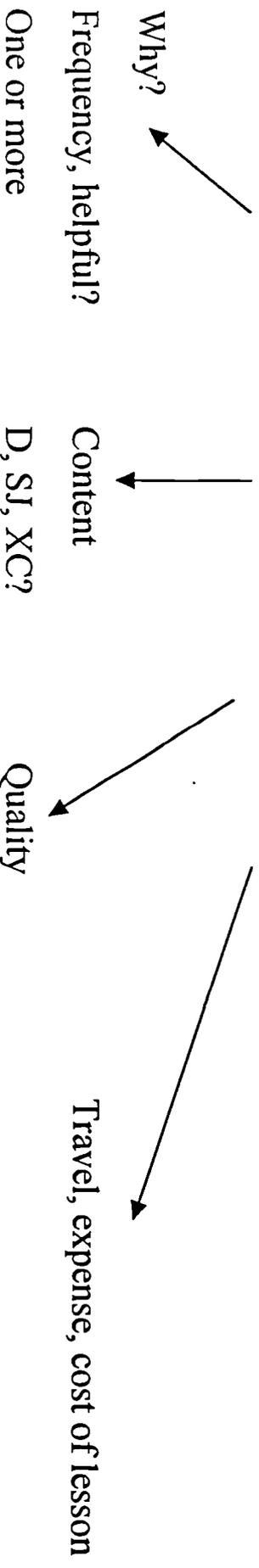
## Training:-

### 1) What is your basic training programme for a horse trial?

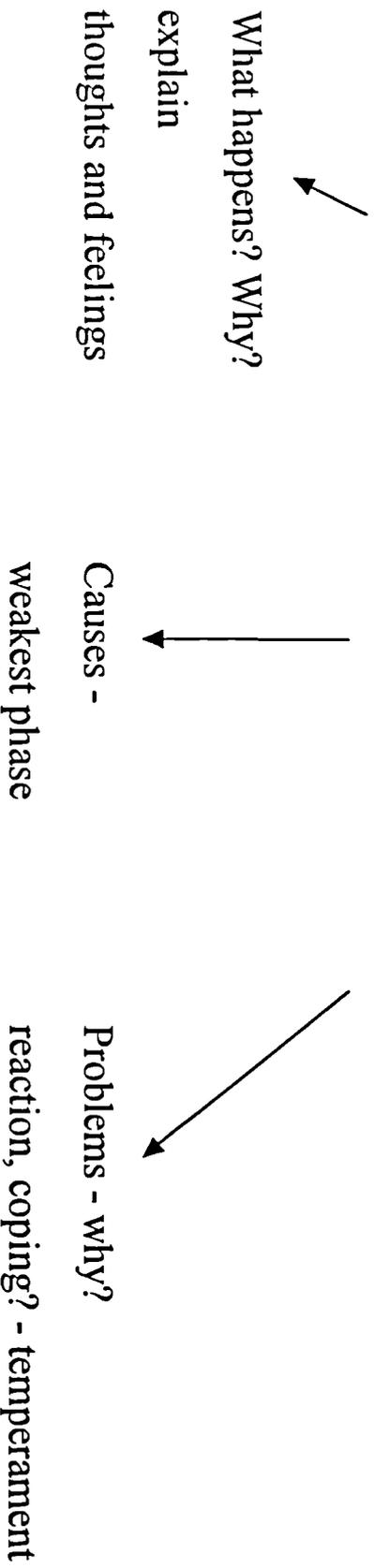


Training:-

**2) Are your schooling sessions with a trainer?**

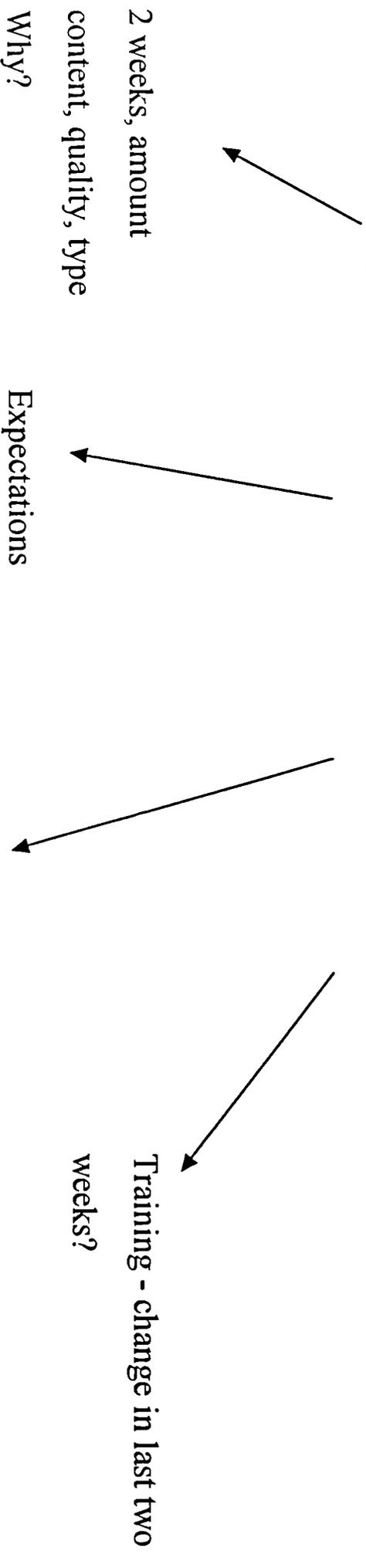


**3) Tell me about the good and bad things that happen in your schooling sessions or lessons.**



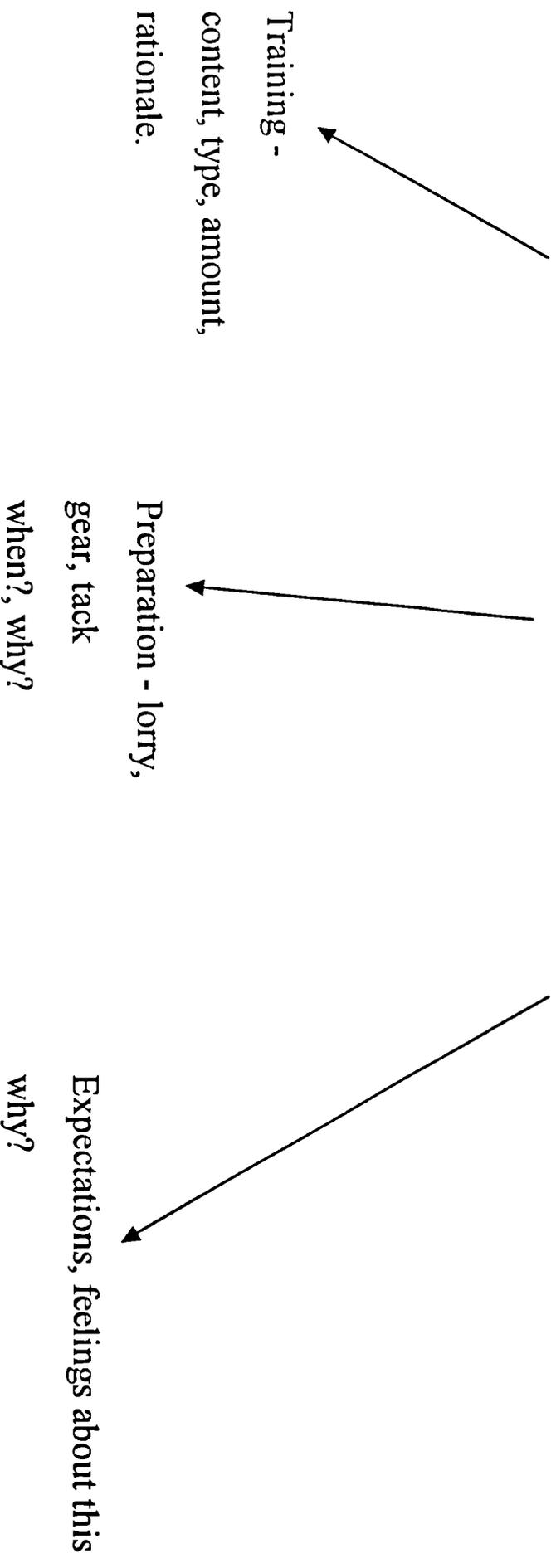
Training:-

4) What training do you do in the last 2 weeks before an event?



The day before the event:-

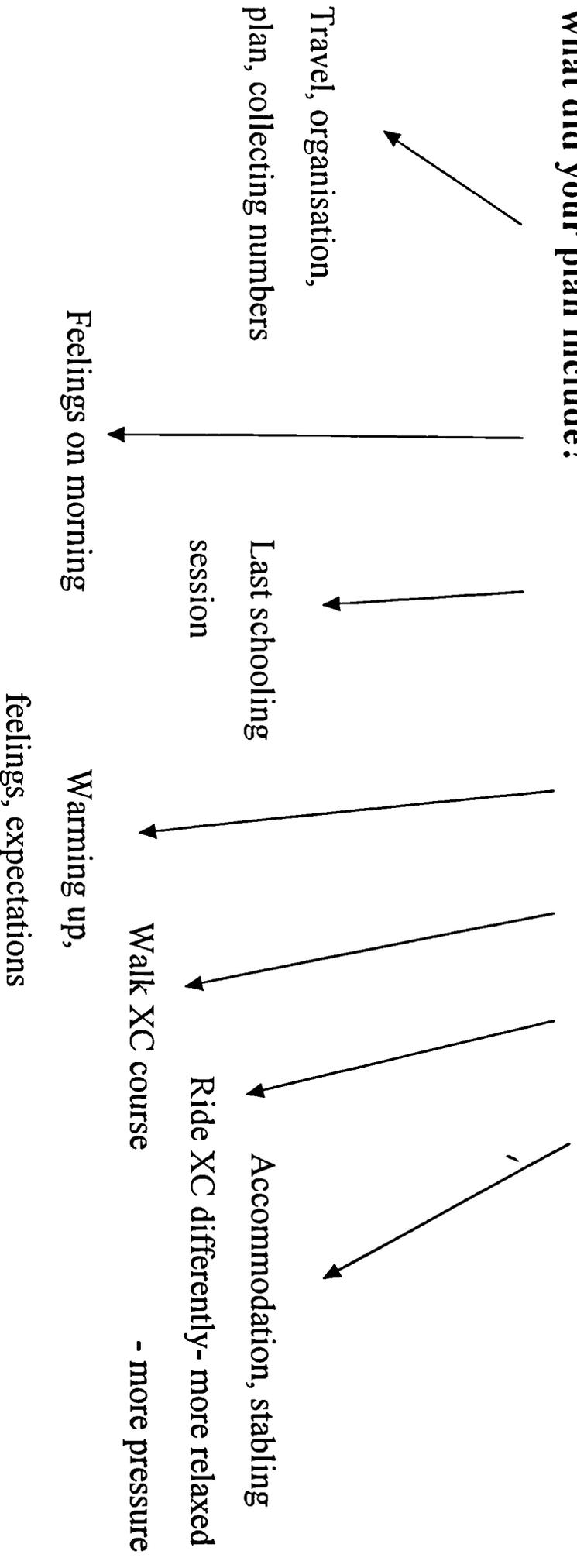
1) What do you do the day before the event in terms of training and preparation?



**The day before the event:-**

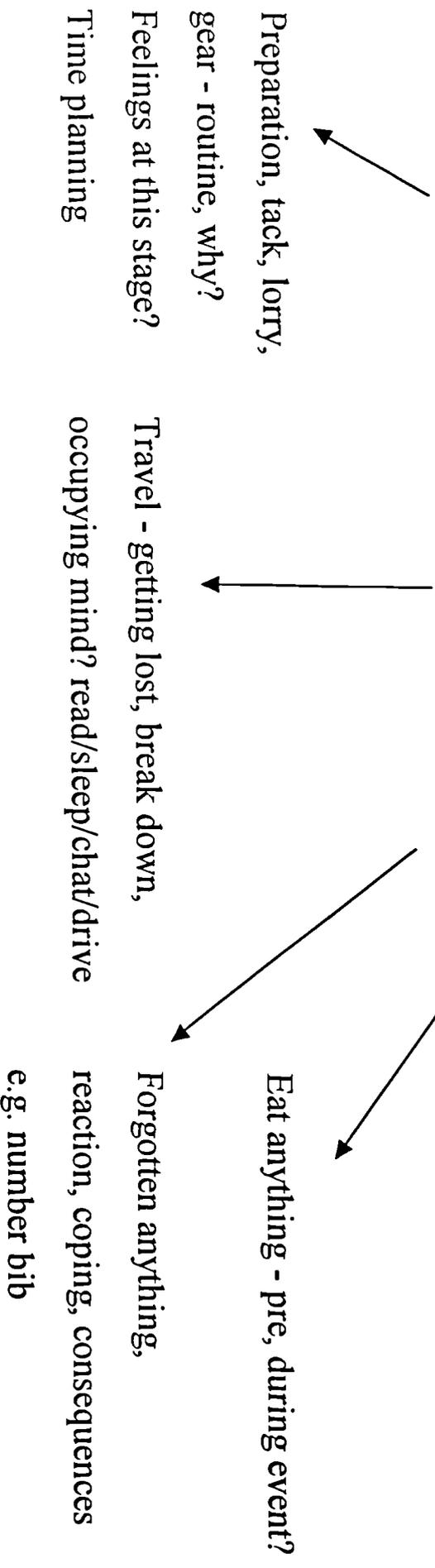
**2) Have you ever competed in a horse trial where you have done the dressage (and SJ) the day before the actual competition?**

**If yes:- tell me about what your preparation for this involved, how did you get ready for this, what did your plan include?**

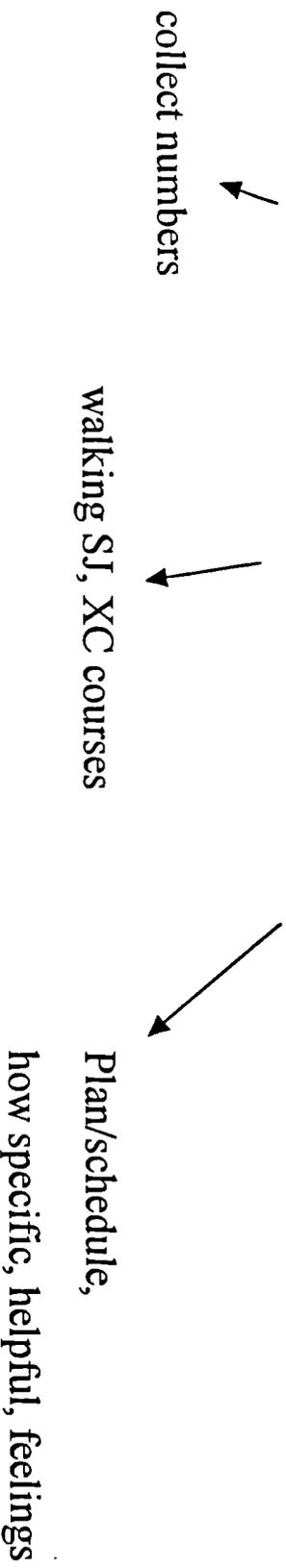


## Competition Day:-

### 1) Tell me about what you do on the morning of the event.



### 2) What do you do when you arrive at the event?



## Dressage phase:-

**1) I'd like you to think about your preparation for the dressage phase. Tell me about your routine from about 2 hours before the test. What things do you do? How do you feel 2 hours before the dressage phase, what are you thinking about?**

Tacking up, warming up,  
checking arena, tack checks,  
mental and physical feelings.  
Expectations.

Last few minutes

before test, feelings?  
what do you do?

Performing  
dressage test.  
Thoughts, feelings.

After test -  
reaction

analyse

Parents, trainers,

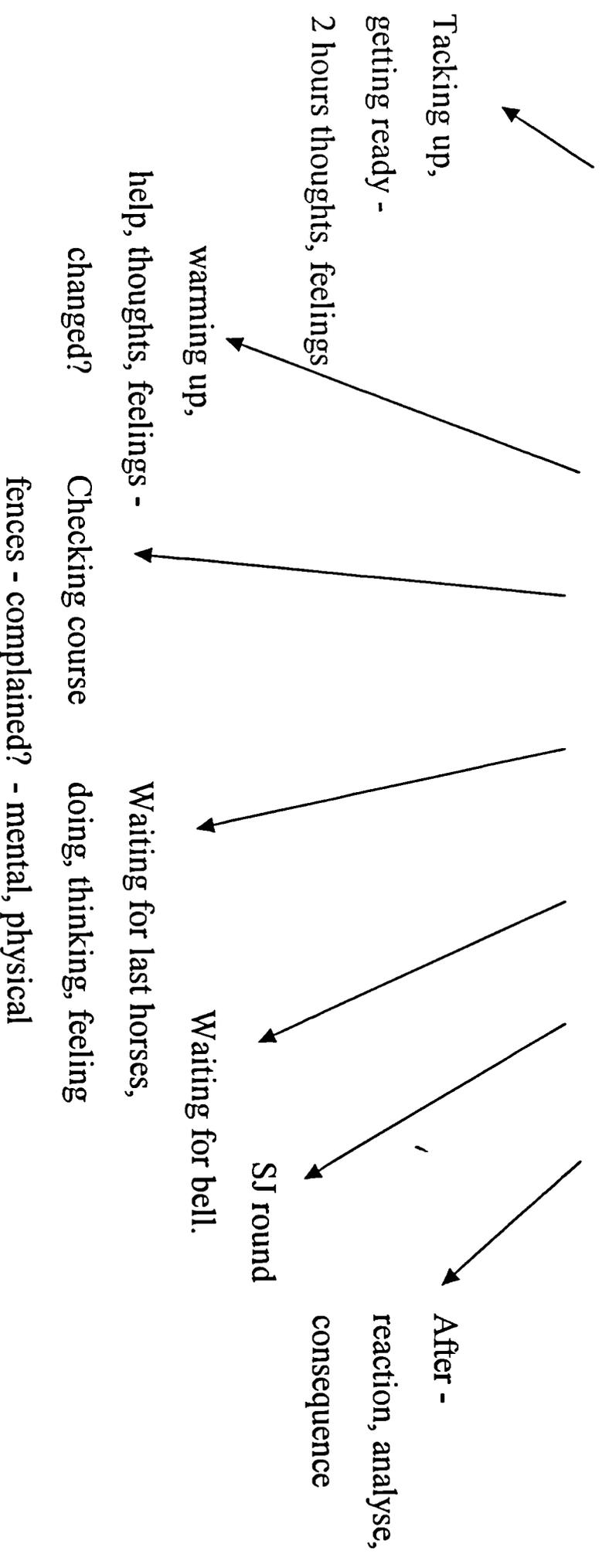
friends

Find out score -  
expectations

copied - under marking?

## Show-jumping Phase:-

1) As with the dressage phase I'd like you to tell me about how you prepare for the show-jumping phase, also what you are thinking about and how you are feeling for this phase.



## Cross-country Phase:-

1) Tell me about the things you do to get ready for the cross-country phase. Do you think about the cross-country immediately after the show-jumping phase?

Tacking up

Warming up -

turn

Countdown from

starter - time yourself

on course

First few fences -

rest of course

Hold up on course

Towards end of course

Finish XC- reaction

analyse

consequences

After event - analysing  
performance

**After the event:-**

**1) How do you react when you have finished the event?**

Relief, anxious -

thinking about performance/horses performance

**2) Are you still analysing your performance the next day?**

why?

analysing with trainer

learning from mistakes

**3) Do you make any changes to your routine, training programme as a result of this analysis?**

Why?

What changes?

## APPENDIX X - Pre-Study Assessment Booklet

**MENTAL TRAINING INTERVENTION STUDY**

**HORSE TRIALS COMPETITION-MEASUREMENT**

**For information:-**

**CLARE POTTER  
CENTRE FOR SPORT AND EXERCISE SCIENCES  
LIVERPOOL JOHN MOORES UNIVERSITY  
MOUNTFORD BUILDING  
BYROM STREET  
LIVERPOOL  
L3 3AF.**

## Instructions.

Please work through the booklet as follows:-

### 1. Complete Section 1:-

- \* Read the instructions page.
- \* Answer questionnaire 1 and 1a **one week** before the competition.
- \* Answer questionnaire 2 and 2a **3 days** before the competition.
- \* Answer questionnaire 3 and 3a **1 day** before the competition.  
*NB. For each questionnaire please record the time at which you complete it in the space provided.*
  
- \* Complete the **General details form** and the **Goal setting form 1 day** before the competition.

### 2. Complete Section 2:-

- \* Answer the Pre-event questionnaire **1 hour** before the Dressage phase.  
(Please complete as close to 1 hour before the dressage phase as is practical for you)  
*NB. Record the time at which you complete it in the space provided.*
  
- \* Complete the Competition Times Sheet.
- \* Answer questionnaire 4 and 4a **half an hour** before the Dressage phase.
- \* Answer questionnaire 5 and 5a **half an hour** before the Show-jumping phase.
- \* Answer questionnaire 6 and 6a **half an hour** before the Cross-country phase.  
(Please complete as close to half an hour before each phase as is practical for you).  
*NB. Record the time at which you complete it in the space provided.*
  
- \* Complete the Score Table after the event.
- \* Answer questionnaire 7 and 7a **one hour** after the competition.  
*NB. Record the time at which you complete it in the space provided.*

### 3. Complete Section 3:-

- \* Complete the Evaluation sheet **the day after** the competition.
- \* Complete the Causal Dimension Scale (CDSII) **the day after** the competition.

Thank you for completing this research booklet.

Clare Potter.  
Sport Psychology Research Assistant.

## **SECTION 1**

## INSTRUCTIONS.

The effects of highly competitive sports can be powerful and very different among athletes. The questionnaire you are about to complete measures how you feel about this competition at the moment you are responding. Please complete the questionnaire as honestly as you can. Sometimes athletes feel they should not admit to any nervousness, anxiety or worry they experience before competition because this is undesirable. Actually, these feelings are quite common, and to help us understand them we want you to share your feelings with us candidly. If you are worried about the competition or have butterflies or other feelings that you know are signs of anxiety, please indicate these feelings accurately on the inventory. Equally, if you feel calm and relaxed, indicate those feelings as accurately as you can. Your answers will not be shared with anyone.

Illinois Self-Evaluation Questionnaire

Questionnaire 1

NAME:- \_\_\_\_\_ SEX: M/F CONDITION: 1 week before Event

**DIRECTIONS:-** A number of statements which sports participants have been used to describe their feelings before competition are given below. The answers are divided into 2 sections. Read each statement and then circle the appropriate number on the scale from 1 to 4 to indicate HOW YOU FEEL RIGHT NOW - at this moment. Then, for each statement, ALSO circle an appropriate number on the corresponding scale from -3 to 3 to signify whether you regard your response to be beneficial or detrimental to your performance. Do not spend too much time on any one question. There are no right or wrong answers.

**Time Completed :-**

	HOW YOU FEEL RIGHT NOW				EFFECT ON PERFORMANCE		
	not at all	some-what	moder-ately so	very much so	very detri-mental	0	very bene-ficial
1. I am concerned about this competition _____	1	2	3	4	-3	-2	-1 0 1 2 3
2. I feel nervous _____	1	2	3	4	-3	-2	-1 0 1 2 3
3. I feel at ease _____	1	2	3	4	-3	-2	-1 0 1 2 3
4. I have self-doubts _____	1	2	3	4	-3	-2	-1 0 1 2 3
5. I feel jittery _____	1	2	3	4	-3	-2	-1 0 1 2 3
6. I feel comfortable _____	1	2	3	4	-3	-2	-1 0 1 2 3
7. I am concerned that I may not do as well in this event as I could _____	1	2	3	4	-3	-2	-1 0 1 2 3
8. My body feels tense _____	1	2	3	4	-3	-2	-1 0 1 2 3
9. I feel self-confident _____	1	2	3	4	-3	-2	-1 0 1 2 3
10. I am concerned about not being placed _____	1	2	3	4	-3	-2	-1 0 1 2 3
11. I feel tense in my stomach _____	1	2	3	4	-3	-2	-1 0 1 2 3
12. I feel secure _____	1	2	3	4	-3	-2	-1 0 1 2 3
13. I am concerned about choking under pressure _____	1	2	3	4	-3	-2	-1 0 1 2 3
14. My body feels relaxed _____	1	2	3	4	-3	-2	-1 0 1 2 3
15. I'm confident I can meet the challenge _____	1	2	3	4	-3	-2	-1 0 1 2 3
16. I'm concerned about performing poorly _____	1	2	3	4	-3	-2	-1 0 1 2 3
17. My heart is racing _____	1	2	3	4	-3	-2	-1 0 1 2 3
18. I'm confident about performing well _____	1	2	3	4	-3	-2	-1 0 1 2 3
19. I'm worried about reaching my goal _____	1	2	3	4	-3	-2	-1 0 1 2 3
20. I feel my stomach sinking _____	1	2	3	4	-3	-2	-1 0 1 2 3
21. I feel mentally relaxed _____	1	2	3	4	-3	-2	-1 0 1 2 3
22. I'm concerned that others will be disappointed with my performance _____	1	2	3	4	-3	-2	-1 0 1 2 3
23. My hands are clammy _____	1	2	3	4	-3	-2	-1 0 1 2 3
24. I'm confident because I mentally picture myself reaching my goal _____	1	2	3	4	-3	-2	-1 0 1 2 3
25. I'm concerned I won't be able to concentrate _____	1	2	3	4	-3	-2	-1 0 1 2 3
26. My body feels tight _____	1	2	3	4	-3	-2	-1 0 1 2 3
27. I'm confident of coming through under pressure _____	1	2	3	4	-3	-2	-1 0 1 2 3

Mental Readiness Form.

Please circle a number.

Time :-

**My thoughts are:**

/1/2/3/4/5/6/7/8/9/10/11/

**CALM**

**WORRIED**

**My body feels:**

/1/2/3/4/5/6/7/8/9/10/11/

**RELAXED**

**TENSE**

**I am feeling:**

/1/2/3/4/5/6/7/8/9/10/11/

**CONFIDENT**

**SCARED**

Questionnaire 2

Illinois Self-Evaluation Questionnaire

NAME:- \_\_\_\_\_ SEX: M/F CONDITION: 3 days before event.

DIRECTIONS:- A number of statements which sports participants have been used to describe their feelings before competition are given below. The answers are divided into 2 sections. Read each statement and then circle the appropriate number on the scale from 1 to 4 to indicate HOW YOU FEEL RIGHT NOW - at this moment. Then, for each statement, ALSO circle an appropriate number on the corresponding scale from -3 to 3 to signify whether you regard your response to be beneficial or detrimental to your performance. Do not spend too much time on any one question. There are no right or wrong answers.

Time Completed :-	HOW YOU FEEL RIGHT NOW				EFFECT ON PERFORMANCE						
	not at all	some-what	moder-ately so	very much so	very detri-mental	very bene-ficial					
1. I am concerned about this competition _____	1	2	3	4	-3	-2	-1	0	1	2	3
2. I feel nervous _____	1	2	3	4	-3	-2	-1	0	1	2	3
3. I feel at ease _____	1	2	3	4	-3	-2	-1	0	1	2	3
4. I have self-doubts _____	1	2	3	4	-3	-2	-1	0	1	2	3
5. I feel jittery _____	1	2	3	4	-3	-2	-1	0	1	2	3
6. I feel comfortable _____	1	2	3	4	-3	-2	-1	0	1	2	3
7. I am concerned that I may not do as well in this event as I could _____	1	2	3	4	-3	-2	-1	0	1	2	3
8. My body feels tense _____	1	2	3	4	-3	-2	-1	0	1	2	3
9. I feel self-confident _____	1	2	3	4	-3	-2	-1	0	1	2	3
10. I am concerned about not being placed _____	1	2	3	4	-3	-2	-1	0	1	2	3
11. I feel tense in my stomach _____	1	2	3	4	-3	-2	-1	0	1	2	3
12. I feel secure _____	1	2	3	4	-3	-2	-1	0	1	2	3
13. I am concerned about choking under pressure _____	1	2	3	4	-3	-2	-1	0	1	2	3
14. My body feels relaxed _____	1	2	3	4	-3	-2	-1	0	1	2	3
15. I'm confident I can meet the challenge _____	1	2	3	4	-3	-2	-1	0	1	2	3
16. I'm concerned about performing poorly _____	1	2	3	4	-3	-2	-1	0	1	2	3
17. My heart is racing _____	1	2	3	4	-3	-2	-1	0	1	2	3
18. I'm confident about performing well _____	1	2	3	4	-3	-2	-1	0	1	2	3
19. I'm worried about reaching my goal _____	1	2	3	4	-3	-2	-1	0	1	2	3
20. I feel my stomach sinking _____	1	2	3	4	-3	-2	-1	0	1	2	3
21. I feel mentally relaxed _____	1	2	3	4	-3	-2	-1	0	1	2	3
22. I'm concerned that others will be disappointed with my performance _____	1	2	3	4	-3	-2	-1	0	1	2	3
23. My hands are clammy _____	1	2	3	4	-3	-2	-1	0	1	2	3
24. I'm confident because I mentally picture myself reaching my goal _____	1	2	3	4	-3	-2	-1	0	1	2	3
25. I'm concerned I won't be able to concentrate _____	1	2	3	4	-3	-2	-1	0	1	2	3
26. My body feels tight _____	1	2	3	4	-3	-2	-1	0	1	2	3
27. I'm confident of coming through under pressure _____	1	2	3	4	-3	-2	-1	0	1	2	3

Mental Readiness Form.

Please circle a number.

Time :-

My thoughts are:

/1/2/3/4/5/6/7/8/9/10/11/

CALM

WORRIED

My body feels:

/1/2/3/4/5/6/7/8/9/10/11/

RELAXED

TENSE

I am feeling:

/1/2/3/4/5/6/7/8/9/10/11/

CONFIDENT

SCARED

## Questionnaire 3

### Illinois Self-Evaluation Questionnaire

NAME:- \_\_\_\_\_ SEX: M/F CONDITION: 1 day before event.

**DIRECTIONS:-** A number of statements which sports participants have been used to describe their feelings before competition are given below. The answers are divided into 2 sections. Read each statement and then circle the appropriate number on the scale from 1 to 4 to indicate HOW YOU FEEL RIGHT NOW - at this moment. Then, for each statement, ALSO circle an appropriate number on the corresponding scale from -3 to 3 to signify whether you regard your response to be beneficial or detrimental to your performance. Do not spend too much time on any one question. There are no right or wrong answers.

1

Time Completed :-	HOW YOU FEEL RIGHT NOW				EFFECT ON PERFORMANCE	
	not at all	some-what	moder-ately so	very much so	very detri-mental	very bene-ficial
1. I am concerned about this competition _____	1	2	3	4	-3 -2 -1 0 1 2 3	
2. I feel nervous _____	1	2	3	4	-3 -2 -1 0 1 2 3	
3. I feel at ease _____	1	2	3	4	-3 -2 -1 0 1 2 3	
4. I have self-doubts _____	1	2	3	4	-3 -2 -1 0 1 2 3	
5. I feel jittery _____	1	2	3	4	-3 -2 -1 0 1 2 3	
6. I feel comfortable _____	1	2	3	4	-3 -2 -1 0 1 2 3	
7. I am concerned that I may not do as well in this event as I could _____	1	2	3	4	-3 -2 -1 0 1 2 3	
8. My body feels tense _____	1	2	3	4	-3 -2 -1 0 1 2 3	
9. I feel self-confident _____	1	2	3	4	-3 -2 -1 0 1 2 3	
10. I am concerned about not being placed _____	1	2	3	4	-3 -2 -1 0 1 2 3	
11. I feel tense in my stomach _____	1	2	3	4	-3 -2 -1 0 1 2 3	
12. I feel secure _____	1	2	3	4	-3 -2 -1 0 1 2 3	
13. I am concerned about choking under pressure _____	1	2	3	4	-3 -2 -1 0 1 2 3	
14. My body feels relaxed _____	1	2	3	4	-3 -2 -1 0 1 2 3	
15. I'm confident I can meet the challenge _____	1	2	3	4	-3 -2 -1 0 1 2 3	
16. I'm concerned about performing poorly _____	1	2	3	4	-3 -2 -1 0 1 2 3	
17. My heart is racing _____	1	2	3	4	-3 -2 -1 0 1 2 3	
18. I'm confident about performing well _____	1	2	3	4	-3 -2 -1 0 1 2 3	
19. I'm worried about reaching my goal _____	1	2	3	4	-3 -2 -1 0 1 2 3	
20. I feel my stomach sinking _____	1	2	3	4	-3 -2 -1 0 1 2 3	
21. I feel mentally relaxed _____	1	2	3	4	-3 -2 -1 0 1 2 3	
22. I'm concerned that others will be disappointed with my performance _____	1	2	3	4	-3 -2 -1 0 1 2 3	
23. My hands are clammy _____	1	2	3	4	-3 -2 -1 0 1 2 3	
24. I'm confident because I mentally picture myself reaching my goal _____	1	2	3	4	-3 -2 -1 0 1 2 3	
25. I'm concerned I won't be able to concentrate _____	1	2	3	4	-3 -2 -1 0 1 2 3	
26. My body feels tight _____	1	2	3	4	-3 -2 -1 0 1 2 3	
27. I'm confident of coming through under pressure _____	1	2	3	4	-3 -2 -1 0 1 2 3	

Mental Readiness Form.

Please circle a number.

Time :-

My thoughts are:

/1/2/3/4/5/6/7/8/9/10/11/

CALM

WORRIED

My body feels:

/1/2/3/4/5/6/7/8/9/10/11/

RELAXED

TENSE

I am feeling:

/1/2/3/4/5/6/7/8/9/10/11/

CONFIDENT

SCARED

General details.

Name:- \_\_\_\_\_ Date of event:- \_\_\_\_\_

Event:- \_\_\_\_\_

Level of competition (N,I,A etc...):- \_\_\_\_\_

Highest current level you compete at (N,I,A etc...):- \_\_\_\_\_

Goal setting details.

Have you set yourself a goal or target for the dressage phase? Yes / No (please circle)

If yes:- please give details of the goal you hope to achieve.

Have you set yourself a goal or target for the show-jumping phase? Yes / No (please circle)

If yes:- please give details of the goal you hope to achieve.

Have you set yourself a goal or target for the cross-country phase? Yes / No (please circle)

If yes:- please give details of the goal you hope to achieve.

## SECTION 2



Pre-Event Questionnaire.

Time of competition:-

About the last few weeks.

1. How do you feel you have been performing in training during the last four weeks?

Extremely Poorly									Extremely Well
1	2	3	4	5	6	7	8	9	

2. How do you feel your horse has been performing in training in the last four weeks?

Extremely Poorly									Extremely Well
1	2	3	4	5	6	7	8	9	

3. How do you feel you have been performing in Horse Trials over the last four weeks?

Extremely Poorly									Extremely Well
1	2	3	4	5	6	7	8	9	

4. How do you feel your horse has been performing in Horse Trials over the last four weeks?

Extremely Poorly									Extremely Well
1	2	3	4	5	6	7	8	9	

5. How do you feel your "trainer" has influenced your performance over the last four weeks?  
( "trainer" can include parents or friends or anyone you consider helps you train).

Very Negatively									Very Positively
1	2	3	4	5	6	7	8	9	

The last Horse Trial.

6. How did you feel about your position in the last Horse Trial?

Extremely Disappointed									Extremely Pleased
1	2	3	4	5	6	7	8	9	

7. How did your position relate to your pre-event expectations?

Very Negatively									Very Positively
1	2	3	4	5	6	7	8	9	

8. How did you feel about your performance in the last Horse Trial?

Extremely Disappointed									Extremely Pleased
1	2	3	4	5	6	7	8	9	

9. How did you feel about your horses performance in the last Horse Trial?

Extremely Disappointed									Extremely Pleased
1	2	3	4	5	6	7	8	9	

10. How did your performance relate to your pre-event expectations?

Very Negatively									Very Positively
1	2	3	4	5	6	7	8	9	

11. How did your horses performance relate to your pre-event expectations?

Very Negatively									Very Positively
1	2	3	4	5	6	7	8	9	

12. How do you feel your "trainer" influenced the result of your last Horse Trial?

Very Negatively									Very Positively
1	2	3	4	5	6	7	8	9	

The next event.

13. How important is it for you to do well in this Horse Trial?

Not at all									Extremely
1	2	3	4	5	6	7	8	9	

Have you set yourself a position goal for this next Horse Trial? Yes/No

14. To what degree do you think that you can achieve this goal?

Definitely No										Definitely Yes
1	2	3	4	5	6	7	8	9		

15. How difficult do you think it will be to achieve this goal?

Extremely Easy										Extremely Difficult
1	2	3	4	5	6	7	8	9		

Have you set yourself a performance goal for this Horse Trial? Yes/No

16. To what extent do you think you can achieve this goal?

Definitely No										Definitely Yes
1	2	3	4	5	6	7	8	9		

17. How difficult do you think it will be to achieve this goal?

Extremely Easy										Extremely Difficult
1	2	3	4	5	6	7	8	9		

18. How do you feel you are riding at the moment?

Extremely Poorly										Extremely Well
1	2	3	4	5	6	7	8	9		

19. How do you feel your horse is performing at the moment?

Extremely Poorly										Extremely Well
1	2	3	4	5	6	7	8	9		

20. How fatigued do you feel at the moment?

Not at all										Extremely
1	2	3	4	5	6	7	8	9		



COMPETITION TIMES SHEET.

Event: \_\_\_\_\_

Date: \_\_\_\_\_

TIME

Dressage Phase: \_\_\_\_\_

Show-jumping Phase: \_\_\_\_\_

Cross-country Phase: \_\_\_\_\_

Illinois Self-Evaluation Questionnaire

Questionnaire 4

NAME:- \_\_\_\_\_ SEX: M/F CONDITION: 1/2 before Drenage

DIRECTIONS:- A number of statements which sports participants have been used to describe their feelings before competition are given below. The answers are divided into 2 sections. Read each statement and then circle the appropriate number on the scale from 1 to 4 to indicate HOW YOU FEEL RIGHT NOW - at this moment. Then, for each statement, ALSO circle an appropriate number on the corresponding scale from -3 to 3 to signify whether you regard your response to be beneficial or detrimental to your performance. Do not spend too much time on any one question. There are no right or wrong answers.

Time Completed :-	HOW YOU FEEL RIGHT NOW				EFFECT ON PERFORMANCE		
	not at all	some-what	moder-ately so	very much so	very detri-mental	0	very bene-ficial
1. I am concerned about this competition	1	2	3	4	-3	-2	-1 0 1 2 3
2. I feel nervous	1	2	3	4	-3	-2	-1 0 1 2 3
3. I feel at ease	1	2	3	4	-3	-2	-1 0 1 2 3
4. I have self-doubts	1	2	3	4	-3	-2	-1 0 1 2 3
5. I feel jittery	1	2	3	4	-3	-2	-1 0 1 2 3
6. I feel comfortable	1	2	3	4	-3	-2	-1 0 1 2 3
7. I am concerned that I may not do as well in this event as I could	1	2	3	4	-3	-2	-1 0 1 2 3
8. My body feels tense	1	2	3	4	-3	-2	-1 0 1 2 3
9. I feel self-confident	1	2	3	4	-3	-2	-1 0 1 2 3
10. I am concerned about not being placed	1	2	3	4	-3	-2	-1 0 1 2 3
11. I feel tense in my stomach	1	2	3	4	-3	-2	-1 0 1 2 3
12. I feel secure	1	2	3	4	-3	-2	-1 0 1 2 3
13. I am concerned about choking under pressure	1	2	3	4	-3	-2	-1 0 1 2 3
14. My body feels relaxed	1	2	3	4	-3	-2	-1 0 1 2 3
15. I'm confident I can meet the challenge	1	2	3	4	-3	-2	-1 0 1 2 3
16. I'm concerned about performing poorly	1	2	3	4	-3	-2	-1 0 1 2 3
17. My heart is racing	1	2	3	4	-3	-2	-1 0 1 2 3
18. I'm confident about performing well	1	2	3	4	-3	-2	-1 0 1 2 3
19. I'm worried about reaching my goal	1	2	3	4	-3	-2	-1 0 1 2 3
20. I feel my stomach sinking	1	2	3	4	-3	-2	-1 0 1 2 3
21. I feel mentally relaxed	1	2	3	4	-3	-2	-1 0 1 2 3
22. I'm concerned that others will be disappointed with my preformance	1	2	3	4	-3	-2	-1 0 1 2 3
23. My hands are clammy	1	2	3	4	-3	-2	-1 0 1 2 3
24. I'm confident because I mentally picture myself reaching my goal	1	2	3	4	-3	-2	-1 0 1 2 3
25. I'm concerned I won't be able to concentrate	1	2	3	4	-3	-2	-1 0 1 2 3
26. My body feels tight	1	2	3	4	-3	-2	-1 0 1 2 3
27. I'm confident of coming through under pressure	1	2	3	4	-3	-2	-1 0 1 2 3

Mental Readiness Form.

Please circle a number.

Time :-

**My thoughts are:**

/1/2/3/4/5/6/7/8/9/10/11/

**CALM**

**WORRIED**

**My body feels:**

/1/2/3/4/5/6/7/8/9/10/11/

**RELAXED**

**TENSE**

**I am feeling:**

/1/2/3/4/5/6/7/8/9/10/11/

**CONFIDENT**

**SCARED**

Mental Readiness Form.

Please circle a number.

Time :-

My thoughts are:

/1/2/3/4/5/6/7/8/9/10/11/

CALM

WORRIED

My body feels:

/1/2/3/4/5/6/7/8/9/10/11/

RELAXED

TENSE

I am feeling:

/1/2/3/4/5/6/7/8/9/10/11/

CONFIDENT

SCARED

Illinois Self-Evaluation Questionnaire

Questionnaire 6

NAME:- \_\_\_\_\_ SEX: M/F CONDITION: 1/2 hr before XC

DIRECTIONS:- A number of statements which sports participants have been used to describe their feelings before competition are given below. The answers are divided into 2 sections. Read each statement and then circle the appropriate number on the scale from 1 to 4 to indicate HOW YOU FEEL RIGHT NOW - at this moment. Then, for each statement, ALSO circle an appropriate number on the corresponding scale from -3 to 3 to signify whether you regard your response to be beneficial or detrimental to your performance. Do not spend too much time on any one question. There are no right or wrong answers.

Time :-	HOW YOU FEEL RIGHT NOW				EFFECT ON PERFORMANCE						
	not at all	some-what	moder-ately so	very much so	very detri-mental	very bene-ficial					
1. I am concerned about this competition	1	2	3	4	-3	-2	-1	0	1	2	3
2. I feel nervous	1	2	3	4	-3	-2	-1	0	1	2	3
3. I feel at ease	1	2	3	4	-3	-2	-1	0	1	2	3
4. I have self-doubts	1	2	3	4	-3	-2	-1	0	1	2	3
5. I feel jittery	1	2	3	4	-3	-2	-1	0	1	2	3
6. I feel comfortable	1	2	3	4	-3	-2	-1	0	1	2	3
7. I am concerned that I may not do as well in this event as I could	1	2	3	4	-3	-2	-1	0	1	2	3
8. My body feels tense	1	2	3	4	-3	-2	-1	0	1	2	3
9. I feel self-confident	1	2	3	4	-3	-2	-1	0	1	2	3
10. I am concerned about not being placed	1	2	3	4	-3	-2	-1	0	1	2	3
11. I feel tense in my stomach	1	2	3	4	-3	-2	-1	0	1	2	3
12. I feel secure	1	2	3	4	-3	-2	-1	0	1	2	3
13. I am concerned about choking under pressure	1	2	3	4	-3	-2	-1	0	1	2	3
14. My body feels relaxed	1	2	3	4	-3	-2	-1	0	1	2	3
15. I'm confident I can meet the challenge	1	2	3	4	-3	-2	-1	0	1	2	3
16. I'm concerned about performing poorly	1	2	3	4	-3	-2	-1	0	1	2	3
17. My heart is racing	1	2	3	4	-3	-2	-1	0	1	2	3
18. I'm confident about performing well	1	2	3	4	-3	-2	-1	0	1	2	3
19. I'm worried about reaching my goal	1	2	3	4	-3	-2	-1	0	1	2	3
20. I feel my stomach sinking	1	2	3	4	-3	-2	-1	0	1	2	3
21. I feel mentally relaxed	1	2	3	4	-3	-2	-1	0	1	2	3
22. I'm concerned that others will be disappointed with my performance	1	2	3	4	-3	-2	-1	0	1	2	3
23. My hands are clammy	1	2	3	4	-3	-2	-1	0	1	2	3
24. I'm confident because I mentally picture myself reaching my goal	1	2	3	4	-3	-2	-1	0	1	2	3
25. I'm concerned I won't be able to concentrate	1	2	3	4	-3	-2	-1	0	1	2	3
26. My body feels tight	1	2	3	4	-3	-2	-1	0	1	2	3
27. I'm confident of coming through under pressure	1	2	3	4	-3	-2	-1	0	1	2	3

Mental Readiness Form.

Time :-

Please circle a number.

My thoughts are:

/1/2/3/4/5/6/7/8/9/10/11/

CALM

WORRIED

My body feels:

/1/2/3/4/5/6/7/8/9/10/11/

RELAXED

TENSE

I am feeling:

/1/2/3/4/5/6/7/8/9/10/11/

CONFIDENT

SCARED

SCORE TABLE.

Section	Number	Penalty Score				Tot. Penalty Score	Position
		D	SJ	XC	XCT		

Questionnaire 7

Illinois Self-Evaluation Questionnaire

NAME:- \_\_\_\_\_ SEX: M/F CONDITION: 1 hr after event

DIRECTIONS:- A number of statements which sports participants have been used to describe their feelings before competition are given below. The answers are divided into 2 sections. Read each statement and then circle the appropriate number on the scale from 1 to 4 to indicate HOW YOU FEEL RIGHT NOW - at this moment. Then, for each statement, ALSO circle an appropriate number on the corresponding scale from -3 to 3 to signify whether you regard your response to be beneficial or detrimental to your performance. Do not spend too much time on any one question. There are no right or wrong answers.

Time :-	HOW YOU FEEL RIGHT NOW				EFFECT ON PERFORMANCE	
	not at all	some-what	moder-ately so	very much so	very detri-mental	very bene-ficial
1. I am concerned about this competition _____	1	2	3	4	-3 -2 -1 0 1 2 3	
2. I feel nervous _____	1	2	3	4	-3 -2 -1 0 1 2 3	
3. I feel at ease _____	1	2	3	4	-3 -2 -1 0 1 2 3	
4. I have self-doubts _____	1	2	3	4	-3 -2 -1 0 1 2 3	
5. I feel jittery _____	1	2	3	4	-3 -2 -1 0 1 2 3	
6. I feel comfortable _____	1	2	3	4	-3 -2 -1 0 1 2 3	
7. I am concerned that I may not do as well in this event as I could _____	1	2	3	4	-3 -2 -1 0 1 2 3	
8. My body feels tense _____	1	2	3	4	-3 -2 -1 0 1 2 3	
9. I feel self-confident _____	1	2	3	4	-3 -2 -1 0 1 2 3	
10. I am concerned about not being placed _____	1	2	3	4	-3 -2 -1 0 1 2 3	
11. I feel tense in my stomach _____	1	2	3	4	-3 -2 -1 0 1 2 3	
12. I feel secure _____	1	2	3	4	-3 -2 -1 0 1 2 3	
13. I am concerned about choking under pressure _____	1	2	3	4	-3 -2 -1 0 1 2 3	
14. My body feels relaxed _____	1	2	3	4	-3 -2 -1 0 1 2 3	
15. I'm confident I can meet the challenge _____	1	2	3	4	-3 -2 -1 0 1 2 3	
16. I'm concerned about performing poorly _____	1	2	3	4	-3 -2 -1 0 1 2 3	
17. My heart is racing _____	1	2	3	4	-3 -2 -1 0 1 2 3	
18. I'm confident about performing well _____	1	2	3	4	-3 -2 -1 0 1 2 3	
19. I'm worried about reaching my goal _____	1	2	3	4	-3 -2 -1 0 1 2 3	
20. I feel my stomach sinking _____	1	2	3	4	-3 -2 -1 0 1 2 3	
21. I feel mentally relaxed _____	1	2	3	4	-3 -2 -1 0 1 2 3	
22. I'm concerned that others will be disappointed with my performance _____	1	2	3	4	-3 -2 -1 0 1 2 3	
23. My hands are clammy _____	1	2	3	4	-3 -2 -1 0 1 2 3	
24. I'm confident because I mentally picture myself reaching my goal _____	1	2	3	4	-3 -2 -1 0 1 2 3	
25. I'm concerned I won't be able to concentrate _____	1	2	3	4	-3 -2 -1 0 1 2 3	
26. My body feels tight _____	1	2	3	4	-3 -2 -1 0 1 2 3	
27. I'm confident of coming through under pressure _____	1	2	3	4	-3 -2 -1 0 1 2 3	

Mental Readiness Form.

Please circle a number.

Time :-

My thoughts are:

/1/2/3/4/5/6/7/8/9/10/11/

CALM

WORRIED

My body feels:

/1/2/3/4/5/6/7/8/9/10/11/

RELAXED

TENSE

I am feeling:

/1/2/3/4/5/6/7/8/9/10/11/

CONFIDENT

SCARED

## **SECTION 3**

Evaluation Sheet.

Did you achieve the goal you had set yourself for the Dressage phase?  
(please circle)

1                      2                      3                      4  
not at all          somewhat          moderately so      very much so

*Please give details:*

Did you achieve the goal you had set yourself for the Show-jumping phase?  
(please circle)

1                      2                      3                      4  
not at all          somewhat          moderately so      very much so

*Please give details:*

Did you achieve the goal you had set yourself for the Cross-country phase?  
(please circle)

1                      2                      3                      4  
not at all          somewhat          moderately so      very much so

*Please give details:*

How successful do you feel you were in this horse trial? (please circle)

1                      2                      3                      4  
not at all          somewhat          moderately          very  
successful          successful          successful          successful

*Please give details:*

## Causal Dimension Scale - II (CDS-II)

**Instructions:-** Following the completion of the competition identify the primary cause for your result. Record this in the space provided.

**Primary reason for result:**

---

---

---

**Instructions:-** Think about the reason you have written above. The items below concern your impressions or opinions of this cause of your performance. Circle one number for each of the following questions.

---

Is the cause something:

- |  |   |   |   |   |   |   |   |   |   |                                     |
|--|---|---|---|---|---|---|---|---|---|-------------------------------------|
| 1. That reflects an aspect of yourself | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | reflects an aspect of the situation |
| 2. Manageable by you                   | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | not manageable by you               |
| 3. Permanent                           | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | temporary                           |
| 4. You can regulate                    | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | you cannot regulate                 |
| 5. Over which others have control      | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | over which others have no control   |
| 6. Inside of you                       | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | outside of you                      |
| 7. Stable over time                    | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | variable over time                  |
| 8. Under the power of other people     | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | not under the power of other people |
| 9. Something about you                 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | something about others              |
| 10. Over which you have power          | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | over which you have no power        |
| 11. Unchangeable                       | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | changeable                          |
| 12. Other people can regulate          | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | other people cannot regulate        |
-

**APPENDIX XI - Interview Analysis - Subject 1, Pre-SMIP**

Pre-Intervention Study - Interview Analysis  
- Subject 1 (23/11/94)

Rider Factors.

*Self-Confidence (SC).*

- " (*show-jumping*)What worries me is when they have planks to a double or a double to planks, you know those planks are going to go" p.29, 1- 176
- " (*show-jumping*)I'm not frightened of the jumping...it's just we could have that fence and that pole moves...that's five penalties every time one falls down...it's quite a lot of penalties" p.27-28 1- 169
- "(*show-jumping- walking course*) I find it helps me because the following day it looks lower!!" p.24, 1-148
- "(*show-jumping*)When you are first walking it you think "Heck", then you go and walk it again and you think "It's not so bad" " p.24, 1-148
- "(*training, show-jumping*)I feel more confident if I have done it...if I haven't then I feel terrible...especially with the show-jumping, I have to go out and do it" p.2, 1-11
- "(*whole event*)Knowing...whether I can cope" p.8, 1-62
- "(*Horse Trials*)I think it's the confidence to know that I can do it" p.12, 1-83.
- "(*show-jumping and cross-country practice and events*)I've got to know that I have done it and I have been there" p.13, 1-87-88
- "(*show-jumping and cross-country*)If I've already been to a few events I don't even bother practising...I feel more confident on the day" p. 13, 1-86-87
- "...least favourite...show-jumping. I don't know why because I used to do more show-jumping than anything else...it never used to be a problem to me. I've had a fall...a bad fall so whether that is it I don't know...but now it is my weakest phase." p.3 1- 26-27
- "(*show-jumping*) my worst phase!!" p.11, 1- 79
- "...the dressage I don't have a problem...it's the show-jumping" p.13, 1-86
- "...the dressage and cross-country I don't really worry about" p. 17, 1- 110
- "(*2 weeks before event*)We can do this...we can do this!!" p.16, 1-106
- " (*1/2-1/4hour before dressage*)Quite confident really as long as my working in is all right which it normally is...I'm quite confident" p.26, 1-156
- "(*cross-country*) I know that once I get out on that course I can cope with anything I've got to cope with" p.30 1-185

"(cross-country) While I'm walking around it's "I hope I can", but once I'm out of that box it's "I know I can" " p.30, 1-185

"(cross-country)..I don't get apprehensive because I know I can do them" p.37, 1-219

"(cross-country)...the majority of times I'm fairly confident that...we are not going to have a lot of problems" p.29, 1-179.

### Worry (W)

"(Preparation for cross-country - wearing body protector)...that is what I think about more than anything" p.30, 1-183

"(Daily hassles) I don't worry about the horse trials when I'm driving, but I worry about the driving, so I would be just as worried but not about the horse trials" p.21, 1-134.

"(cross-country) I'm just worried about losing my way...that's my problem and that's what I worry about, not knowing where I am going" p.20, 1-125

"(dressage) I do medium dressage and so as a Novice test then I'm not really worried about it." p.26, 1-158

"(cross-country) I don't worry" p.37, 1-219

"I do get very upset if I have to travel to a place and I don't know where I'm going, that does agitate me" p.35, 1-212

"...it will always be in the back of my mind...the show-jumping" p.17, 1-110

"(feelings from 2 hours before show-jumping to going in arena) They get worse...I know I've got to go in there and I've got to do this" p.27-28, 1-169

"(waiting for bell in show-jumping ring) "Oh God is this canter right for fence number one", or "Have I got enough or have I got too much?" p.28, 1-175

"(horse's behaviour in show-jumping)...apprehensive, you are wondering whether you are going to get to the right place at the right time" p.6-7, 1-53-54

"(show-jumping)...there is apprehension there, I mean it's not like plain sailing" p.17, 1-111

"(increase SA, prior to event) I've never eaten at competitions...but that's something I've always done, even before exams...so there must be a lot of anxiety that I don't feel comes out, but there must be because I don't eat" p.25, 1-154

"(show-jumping) "Oh no, I don't want to do this", well not that I don't want to do this but I know I'm going to make a hash of it or something is going to go wrong" p.27, 1-167

"(after cross-country)Glad it's all over...he's never had a problem only the time has been a problem...pleased with him really and exhilaration that you've done it" p.32, 1- 196

### *Time Urgency (TU).*

"(dressage plan of action)I've got to get in there and then I've got to give myself enough time" p.26, 1-157

"(dressage and show- jumping)I know that I need to get on no more than 1/2 hour before the dressage...the show-jumping I need longer" p.24, 1-150

" (day before the event)It is worry...I mean I'm competitive but I'm also thinking "Well I've got to get him ready...do my work...walk the course..." p.18, 1-118

"(morning of event)...the actual horse trials isn't foremost in my mind at that time because I'm thinking "I've got to get there". " p.21, 1-131

" (daily hassles)...I would be uptight...but that doesn't happen in this case because I'm too busy trying to get where I'm going" p.21, 1-134

" (day before event)...I'm thinking..."I've got to get him ready...do my work...walk the course...get ready...know where I'm going" " p.18, 1- 118

"(morning of the event)Anxious to get there...I just want to get there" p.20, 1-131

"(cross-country)It's a case of just wanting to get on and do it...I just want to do it" p.30, 1-185

"(arriving at event)I want to get going...I want to do it" p.23, 1-138

"(warming up prior to show-jumping)I want to get in, I want to get in and out and then that's it" p.28, 1-174

### *Locus of Control (LoC).*

" (importance of phase)It doesn't matter what your dressage score is... if you are bad at the show-jumping then that is it!!" p.2 1- 10

"(show-jumping)He just takes over...and then gets very bossy...it is very annoying to ride him when he is like that...because you know what he can do" p.6-7, 1-53-54

### *Motivation (M).*

"(show-jumping training)If I'm not careful I'll leave it" p. 12, 1-80.

"I just knew that having done the show-jumping that if I really stimulate myself I can do the job" p.12, 1-82

"(after dressage, before show-jumping)It makes me more determined to go clear if I've got a good score" p.27, 1-166

"(feelings about cross-country)..because I'm competitive it makes me go out there...makes me go on and do the things that I may have been apprehensive about" p.37, 1-219

"(show-jumping competitions as practice for horse trials)...I'm stimulated then and I'm there to do the job, but I've got to get there first" p.12, 1-81

### *Concentration (C)*

"(dressage)..the other girl who was competing...did an abominable test and got the same marks as me...and that annoyed me...because he couldn't have done any better...so I was annoyed" p.26, 1- 160

"(dressage)I'm very concentrated, I don't see anything else...nothing else is out there, it's just the arena and those markers and what I'm doing within them" p.26, 1-159

"(cross-country)...he's actually 99% of the time only a couple of seconds over the time, which has been my fault because I have been messing him about and holding him back as we've been coming in or I've not been reading the watch properly" p.10, 1-73

"When I'm actually riding and I've got my mind in to work him I don't worry"p.25, 1-155

"(before competing)I have to keep myself motivated because then I don't worry" p.25, 1-153

### *Event Readiness (ER)*

" (walking cross-country)I have a quick check to see where I can make up the time...when I walk it the first time I just can't take it in, I've got to know where I'm going really before I can do that" p.19, 1-124

### *Attributions (A)*

"(post event analysis)It's mostly the show-jumping...not temper but aggravation with myself because I feel that I have let him down...aggravation with myself if I have made a disaster in the show-jumping that really I should get myself a bit more tuned in" p.33, 1-198

" (show-jumping - lack of preparation)so annoyed with myself really, not annoyed with him but annoyed with myself." p.2, 1- 14

"(show-jumping)...but when you think you would have been at the top...if you hadn't been so laid back in your preparation...so annoyed with myself really, not annoyed with him but annoyed with myself." p.2, 1- 14

"(cross-country)...I just go and do stupid things" p.32. 1-195

"(timing with watch on cross-country)...I wish I didn't now because I'm hopeless, I don't really think I'm very good...I think I would be better not doing it really" p.31, 1-188

"if you are bad at the show-jumping then that is it!!" p. 2 1-10

"(show-jumping) It's me that's the problem" p. 12, 1- 82

### *Locus of Control (LoC)*

"(show-jumping)we always have quite a laugh about it because I find it difficult to stop him sometimes...there's nothing I can do about it" p.29, 1-177

### *Competition Strategies (CSt)*

"(mental practice of dressage test movements)The night before I sort of make sure I can say it and say it and say it". p.18, 1-112

"(prior to dressage)Going through it in my mind...while I'm going down there I'm going through the test" p.23, 1-144

"(mental prep for show-jumping)I'm thinking about the turns I have to make, and that fence is in the way...I've got to get round there" p.28, 1-172

"(dressage, night before)I see the arena...I just see the arena and the letters or markers...and then all the movements I have to do" p.18, 1-113-114

" (prior to competing)If I'm there early then I will walk the show-jumping course...I have to keep doing, I don't sit down" p.25, 1-153

"The show-jumping, because I know that is something that I have to keep up. But the rest of it I'm normally quite pleased with and I know that I can solve it. The show-jumping I know that I have got to keep on" p. 33, 1-201

" (cross-country)Always if I can, I try to walk it the night before...then I can think about the track really, I walk it again on the day if I possibly can...but then I know where I'm going" p.19, 1-124

"(cross-country walking)...then I know where I'm going and I have a quick check...see where I can make up the time" p.19, 1-124

### **Horse Factors.**

#### *Confidence in Horse (CH).*

"Knowing whether he can cope" p.8, 1-62.

"(criteria for choosing events)...as long as I know...the horse is capable of jumping the tracks." p.8, 1- 61

"He's just so good" p.17, 1-108

"(*Horse trials*)I think its the confidence to know that he can do it" p.12, 1-83

"He doesn't normally give me any problems to worry...except in the show-jumping "  
p.17, 1-110

"He doesn't normally give me any problems to worry." p.17, 1-110

"(*dressage*)I know he can do it" p.26, 1- 158

### *Event Readiness (ER)*

"(*Cross-country*)my only apprehension was..."Was he fit enough?" p.17, 1- 107

"(*poor ground conditions*)He's a big Irish horse so the ground isn't really going to bother him as long as he's fit." p.8, 1-60

"(*show-jumping*)It's his best phase " p.11, 1-79

"...he's getting more confident" p.16, 1-102

### *Horse's Ability (HA).*

"(*training*)...not that he can't cope but he gets worried and things go awry" p. 11, 1-77

" He's very laid back...he takes everything in his stride on the cross-country...he just check's everything out...he's very prepared for that" p.6, 1- 49-50

"...because there doesn't seem anything in horse trials dressage to keep his mind active throughout the test in comparison to pure dressage". p.17, 1- 111

"(*training - horse's ability*)...it's got to be built up correctly...we are working on changes at the moment. but you've got be careful you don't do too many because he gets worried about it and starts backing off" p.11, 1-75

### **Significant Others Factors**

#### *Self-consciousness (SeC).*

"(*show-jumping*)...when I go to a competition...the apprehension...I think it's probably people seeing me make a mess of it...in that phase" p.12, 1- 81

"(*show-jumping*)...I just kept thinking "What will people think, I can't even get him round the corners on the correct lead" p.13, 1- 85

"...because the horse trials dressage is so basic you feel you might make a fool of yourself if you don't do well!!" p.17, 1-11

"I think out on the cross-country it's OK because you've only got a few people watching you, but in the show-jumping...they are all there" p.12, 1- 84

### *Concentration (C).*

"...sometimes I think "Why did you say that?, that is stupid, you are driving me mad, go away. But 99% of the time they are behind you" p.35, 1- 209

" (*dressage stewards*)...the dressage phase...there isn't much that upsets me...apart from sometimes the stewards...sometimes they aren't very forthcoming, but the majority of them are all right" p.35, 1- 212

"(*warming up for show-jumping*)When you feel you are right and you've got the right canter then you want to go and somebody turns in front of you and puts you off and that upsets me" p.34, 1-207

"(*show-jumping collecting ring*)I get very frustrated in the collecting ring, and you get these people and they drive me mad because they keep riding in front of the fence" p.34, 1-207

### *Event Readiness (ER).*

"(*trainer's help*)...he's helped me a lot myself...it would have been very, very difficult without help and he seems to be able to do that so that is very good" p.14, 1-95

"Sarah is brilliant on the day, she does all the bandages while I'm walking the course...I've got someone who is really good and she's brilliant doing the show-jumping because they do show-jumping and she calls me and helps me with the course and that's brilliant" p.22, 1-135

### *Locus of Control (LoC).*

"(*External locus of control*)I need Sarah because she's good at the show-jumping and organises and I feel sometimes as though I can't cope if she's not there" p.27, 1-64

"(*external locus of control*)I need Sarah because she's good at the show-jumping...I feel sometimes as though I can't cope if she's not there" p.27, 1-164

### *Equity (E)*

"(*anger at dressage judges*)I think people should just watch the performance rather than say "Oh this is what this horse is going to do, this is the class he falls in", before he's actually judged anything" p.16, 1-103

### *Competition Strategies (CSt)*

"(*trainer's aims*)To keep everything very calm, but very positive" p.34, 1-207

## **Rider and Horse Factors.**

### *Self-confidence (SC)*

"...the better he goes the more confidence I'll get" p.9, 1-69.

"(prior to dressage)Before the dressage expectations are really to do reasonably well because he can do the job" p.25, 1-155

### *Competition Strategies (CSt)*

"I lunge him normally because I do know if I did ride him the day before the event then I might just get at him...he's always performed better on the day because...I've not got at him...I'm not there hacking at the top and he's not upset" p.18, 1-116

### *Attributions (A)*

"(external unstable)I've got two horses now and I'm quite lucky in the fact that they are quite genuine and quick to learn" p.15, 1- 99

" (horse's ability)...I'm lucky in that way" p.6, 1- 49-50

"(horse's ability)He's very quick and sharp and I still haven't had any problems with him,...so I'm quite lucky really" p.15, 1-101.

## **Rider and Significant Other Factors**

### *Self-Confidence (SC)*

"(watching show-jumping)I think "They seem to find it easy, why don't I?"p.24, 1- 149

### *Locus of Control (LoC)*

"(show-jumping) but there are too many people round here that won't let me leave it!!. So they make me go out and do it" p. 12, 1-80

"(show-jumping)..they have to make me go out to competitions...so they push me and then I go...I would be lazy at that if I could get away with it" p. 12, 1-80

"(dislike of horse by dressage judge)...you have to put up with it, it's a thing that is there and won't go away" p.27, 1- 163

"(trainer's help, hassles in collecting ring prior to show-jumping)...and he says "Look it's all right, just come again", and then that just calms it l down again" p.34, 1-207

### *Competition Strategies (CSt)*

"(before dressage)I go off on my own and they leave me alone...I always want to be left alone...they know, they just go away and leave me alone...and while we're tacking up, nobody says a lot...we're all very quiet" p.23, 1-141

"(preparation for dressage) I don't really get upset...I guess it's because I just don't talk...prepare the horse and that's it I just go...and they get the vibes" p.23, 1-142

*Coping Skills (CS)*

"(show-jumping) I just kept thinking "what will people think, I can't even get him round the corners on the correct lead", and in the end I thought "Beggars the lead, my job is to get over the fences and if I keep messing round then I'm going to get time penalties and I know I'm going to get over the fences when I get there, just get over it". p.13, 1- 85