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Fear of Failure, Experience, and Division as Predictors of State Anxiety in Usfa Epee Fencers

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FEAR OF FAILURE, EXPERIENCE, AND DIVISION AS PREDICTORS OF STATE ANXIETY IN USFA EPEE FENCERS

by

Elizabeth Helen Athanas

(Under the Direction of Jonathan N. Metzler)

ABSTRACT

Research looks for the sources of state anxiety for individual athletes prior to competition, which can be debilitating (Gould, 1993; Gould, Horn & Spreeman, 1983). Non-elite athletes who are high trait anxious (possibly fear of failure) have higher state anxiety than elite athletes (Conroy, 2002; Gould, Horn & Spreeman, 1983). Fencers may be prone to elevated state anxiety. No research links these variables together in fencing. The purpose of the study is to examine fear of failure, experience, and division as predictors of state anxiety for epee fencers prior to competition. Epee fencers (N = 145) who competed in the USFA Summer Nationals completed a demographics questionnaire, the Competitive State Anxiety Inventory-2R (Cox, Martens & Russell, 2003), and the Performance Failure Appraisal Inventory (Conroy, Willow, & Metzler, 2002). Multiple regression analyses revealed fear of failure as a predictor of cognitive anxiety ($\beta = .44$, $p < .001$). Division I-A fencers are predictive of higher cognitive anxiety than Division I fencers ($\beta = .20$, $p = .04$). None were significant predictors for somatic anxiety. Experience was not associated with either cognitive or somatic anxiety.

INDEX WORDS: Fear of failure, State anxiety, Experience, Fencing, Sport psychology

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by

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DEDICATION

I remember it well; the conversation we had as we walked across a parking lot on campus. It was about two years after I had graduated from Chapel Hill. At the time, I was at a low in my life and I had entirely no direction. I could feel the North Carolina chapter in my life ending, but I had no idea where the new chapter would start. I was broke, barely employed, injured, hopeless, and alone. I was so far away and disconnected from my family in New York. He stepped in with the guidance, understanding, and the motivation I needed in order to gain control over my life. At the time, he believed in me more than I could ever imagine. He made me realize that I had an untapped potential and that I could go on to achieve greatness. I never would have made it this far if it weren't for the tremendous impact he has on every life he touches.

I am dedicating this thesis to Coach Ronald C. Miller, PhD, the head varsity fencing coach at the University of North Carolina at Chapel Hill. He is truly the world's best man.

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Most importantly, I would have not considered getting a Master's Degree if it wasn't for the diligence and resilience of my mother. She returned to school after having a family and a significant leave of absence from academia. Despite many arduous obstacles, she earned five college degrees and found her dream job in the Center for Enhanced Performance at the United States Military Academy. From her experiences shadowing me at fencing tournaments and learning about sport psychology from work, she placed a bug in my ear about getting a Masters in Sport Psychology. My mother is an

admirable woman whose constant love and undying devotion helped make this possible. She is an inspiration to us all.

My two wonderful sisters, who are my best friends, can always make me smile and laugh. They were always there to be a shoulder to lean on and cry on, no matter how bad things got in my life and no matter what was going on in their lives. Despite obstacles and dead ends, we stay loyal to each other and remind one another to enjoy the journey, no matter how rough it may be. They will forever be in my heart. My mother and my sisters are all my heroes.

And to Brandon, the crazy love of my life, never seizes to remind me to slow down and enjoy life. I am so thankful that I have a loving partner who supports and encourages me throughout the trials and tribulations of life. I couldn't ask to be with a better man and I am truly spoiled by your affection. I look forward to many years of skydiving and various other adventures together. I cannot measure the amount of love that I have for you.

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INTRODUCTION

Athletes can face anxiety as they prepare to compete, which can carry over into competition. Given that precompetitive anxiety can be debilitating to performance within competition (Weinberg & Genuchi, 1980), understanding individual differences that predispose athletes to experience elevated anxiety prior to competition would be useful information for sport psychology consultants, coaches, and athletes. In fencing, facing an opponent requires knowledge of complicated tactics and the ability to apply those tactics in a bouting situation. When fencing an opponent, a fencer must anticipate, plan, and make proper decisions while coordinating their eyes, arms and legs at high speeds. The intense mental processes and attentional precision required to compete at a high level in fencing may make the sport cognitively demanding. In fact, fencing has been labeled, "physical chess," due to the unique emphasis the sport allocates to mental components.

As individual sport athletes, fencers may be more exposed to evaluation than team sport athletes given that responsibility for performance is not distributed across several performers. For fencers, individual successes and failures are accentuated. With such high individual stakes, fencers may be particularly prone to experience precompetitive anxiety. Research has provided some evidence that individual sport athletes experience higher levels of precompetitive anxiety than team sport athletes (Scanlan & Lewthwaite, 1987; Simon & Martens, 1979). Unfortunately, research examining precompetitive anxiety in fencing is limited. Given the cognitive nature of this individually risky sport, the purpose of the current study was to investigate antecedents of precompetitive anxiety in fencing.

Several individual differences predispose an athlete to experience precompetitive state anxiety including trait anxiety (Gould, Horn & Spreeman, 1983; Hanton, Mellalieu & Hall, 2001; Scanlan & Lewthwaite, 1984), experience and ability (Fenz & Jones, 1972; Heckhausen, 1990; McGregor & Abrahamson, 2000), and elite versus non-elite status (Morgan & Johnson, 1977; Weinberg & Genuchi, 1980). While research revealed a positive association between fear of failure and sport anxiety (Conroy, 2001; Conroy et al., 2002), no research has documented the relationship between fear of failure and state anxiety experienced prior to a significant fencing competition.

Lazarus (1999) defines anxiety as "a basic unitary emotion triggered by stimuli perceived to be threatening, characterized by avoidance tendencies and clearly distinguishable from challenge-related emotions" (p.224). State anxiety is apprehension in response to a perceived threatening situation (Spielberger, 1966). Trait anxiety is a stable characteristic that perceives an array of situations as threatening and responds to such threats with state anxiety (Spielberger, 1966). The multidimensional anxiety theory proposed that state anxiety can be experienced as cognitive and/or somatic anxiety (Martens, Burton, Vealey, Bump, & Smith, 1990). Cognitive anxiety has been characterized as negative thoughts, such as self-doubt and hostile self-talk. In contrast, somatic anxiety has been conceptualized as physiological responses to threatening situations, such as rapid heart rate, tense muscles, butterflies in the stomach, shortness of breath, and/or clammy hands (Alexander & Krane, 1996; Martens et al., 1990).

Elevated state anxiety can be detrimental to athletic performance in competition. Some effects include reduced ability to focus properly on relevant cues and make quick decisions, decreased motor coordination, and avoidant coping strategies (Anshel, 1990;

Anshel, Brown & Brown, 1993; Krohne & Hindel, 1988). Other effects of state anxiety include reduction of working memory capacity (Eysenck, 1934), poor perception of control (Hanton, O'Brien & Mellalieu, 2003), unrealistic expectation of performance (Krane, Williams & Feltz, 1992), decreased goal achievement (Hall & Kerr, 1998), and decreased attention on task-relevant cues (Ryska, 1998). Given that some evidence demonstrated that individual sport athletes experience more state anxiety than team sport athletes (Griffin, 1972; Simon & Martens, 1979) the effects of anxiety on performance may be particularly detrimental in individual sports. Indeed, Weinberg & Genuchi (1980) found that low anxiety elite golfers performed significantly better than moderate or high anxiety golfers. Understanding individual differences that predispose individual sport athletes to elevated state anxiety could help sport psychology consultants develop specialized performance enhancement interventions.

Sport psychology scholarship has documented many different sources of state anxiety. Past performance (Krane & Williams, 1987), fear of failure (Gould, Horn & Spreeman, 1983), trait anxiety (Martens et al, 1990), and performers' skill level (Hackhausen, 1990) have been found to provoke state anxiety in athletes. Athletes with a history of failing tend to be more cognitively anxious prior to competition (Gould, Petlichkoff & Weinberg, 1984). In a study using wrestlers, competitors who were successful, experienced lower levels of anxiety than their unsuccessful counterparts (Morgan & Johnson, 1977). Positive and negative consequences that come from success and failure may build up over the course of a competitive career leading to the development of trait anxiety (McGregor & Abrahamson, 2000).

Trait anxiety has been conceptualized as a stable individual difference characteristic. High trait anxious individuals perceive a broad array of situations as threatening and likely experience elevated state anxiety more easily than low trait anxious individuals (Spielberger, 1966). Trait anxiety has been found to predispose athletes to experience state anxiety in runners (Donzelli & Dugoni, 1990), wrestlers (Gould, Horn & Spreeman, 1983), golfers (Krane & Williams, 1987), soccer players (Hanton & Connaughton, 2002), tennis players (Covassin & Pero, 2004), gymnasts (Mahoney & Avener, 1977) racquetball players (Meyers, Cooke, Cullen & Liles, 1979), and divers (Highlen & Bennett, 1983).

Recent scholarship in sport has focused on one form of trait anxiety specifically relevant to achievement strivings: fear of failure. Fear of failure is an achievement motive disposition that predisposes individuals to experience anxiety and apprehension because individuals have learned that failure is associated with aversive consequences (Conroy, 2004; Conroy & Coatsworth, 2004; Conroy & Elliot, 2004). Conroy, Willow & Metzler (2002) identified the aversive consequences of fear of failure to be: (a) experiencing shame and embarrassment, (b) devaluing one's self-estimate, (c) having an uncertain future, (d) important others losing interest, and (e) upsetting important others.

Fear of failure has been linked to a variety of maladaptive consequences. Athletes high in fear of failure may avoid challenges or exhibit an extremely diligent work ethic to avoid failure (Covington, 1992; Elliot & Church, 1997). It has also been found that fear of failure is positively linked to mastery-avoidance, performance-approach and performance-avoidance goals (Conroy & Elliot, 2004; Elliot & McGregor, 1999, 2001). In a study using recreational athletes, fear of failure was positively associated with hostile

and maladaptive statements, high levels of self-blame, self-attack and self-neglect, and low levels of self-affirmation and self-love while failing (Conroy & Metzler, 2004). A psychological risk of fear of failure is that it can inhibit an athlete from never reaching their full potential (Conroy, 2001). Physical side effects include clinical headaches disorders and male sexual dysfunction (Bruce & Barlow, 1990; Passchier, Van der Helm & Orlebeke, 1984). Fear of failure has been associated with cognitive disruption, somatic anxiety, and worry (Conroy et al., 2002) supporting the proposition that fear of failure predisposes individuals to experience elevated anxiety in situations of increased risk (i.e., evaluation, competition). It is important to note that the samples in many of these studies included college students and were not focused specifically on athletes. Research linking fear of failure to anxiety experienced by athletes immediately prior to competition is lacking.

Previous research comparing elite athletes to non-elites athletes has revealed that elite athletes are more resilient in competitive and stressful situations. Anshel & Porter (1996) determined that elite swimmers were more self-confident, better at managing pre-competition stress, less likely to be irritated at distractions before a race, and posses a higher state of concentration. Hanton, Evans & Neil (2003) discovered that non-elite athletes interpret their anxiety as negative in regards to an upcoming performance situation.

Performers' skill level and year of experience in sport have been found to be predictors of competitive anxiety (Fenz & Jones, 1972; Heckhausen, 1990). Meyers et al. (1979) found that athletes who had lower skill levels indicated higher levels of anxiety during competition.

There is no current research linking fear of failure as a predictor of state anxiety. Research does, however, support that the five lower-order themes of fear of failure are associated with trait anxiety and somatic anxiety (Conroy, 2001; Conroy et al., 2002). In addition, trait anxiety has consistently been found to be a predictor to state anxiety (Conroy, 2001; Hanton, Mellalieu & Hall, 2001; Smith, Smoll & Wiechman, 1998; Spielberger, 1966). The results of this study would contribute to the growing base of sport psychology knowledge and how certain types of fear of failure put epee fencers at risk for precompetitive state anxiety.

Also, the research examining the psychological constructs of fencing is severely limited. Additional research that investigates fencing as a sport that has various mental complexities will benefit both the base of knowledge of sport psychology and fencing as a competitive sport. Because fencing is just one of many individual sports, the results of this study can be ideally generalized for other sports as well, such as tennis.

Currently, the availability of psychological skills training or sport psychology consultants for fencers is reserved for the very elite and/or wealthy competitors, and consulting is done primarily on a private practice basis. By identifying which fears of failure predispose fencers to experience state anxiety, consultants may be prompted to examine certain interpersonal dynamics or developmental patterns that led to fear of failure. Consultants could address techniques such as self-talk (Conroy & Metzler, 2004), or perceptions of interpersonal dynamics with important others (coaches, parents, teammates, potential colleges) (Conroy, 2003b; Conroy, Poczwardowski & Henschen, 2001). Researchers have expressed the need for further research on skill level (such as division) and trait anxiety (such as fear of failure) (Hanton, O'Brien & Mellalieu, 2003).

Examining the relationship between cognitive and somatic anxiety before a competition is also an area that requires further investigation (Jones, 1995). Also, research is needed to discover why individual differences manifest anxiety before an achievement situation (Hall & Kerr, 1998).

Purpose of Study

The purpose of this study was to investigate factors that contribute to precompetitive somatic and cognitive anxiety in USFA epee fencers prior to a significant event. It was hypothesized that both cognitive and somatic anxiety would be associated positively with fear of failure and negatively with experience and division.

METHOD

Participants

Participants included 145 epee fencers competing in the 2006 Summer National United States Fencing Association Championships. The sample included both men (n = 69) and women (n = 76). Participants ranged from 14 to 55 years old with a mean age of 26.43 years (SD = 10.98). This sample included a wide variety of experience, ranging from 6 months to 38 years (M = 7.27, SD = 6.19).

Only epee fencers from four different competitive divisions were included. Fencing ratings are letters that are earned through previous competitive results. They range from "A" being the highest to "E" being to the second highest. "U" is unrated and the lowest rating. Each competitive division has rating restrictions. Division I is A through C, Division II is C through U and Division III is D through U. Division I-A does not have rating requirements; competitors qualify by placing in top eight at their respective Sectional Championships. Competitors at Summer Nationals must qualify through previous tournaments (Divisionals and Sectionals). Ratings are assigned to weapon, not per individual fencer. For example, a fencer could have three different ratings, one for each weapon and thus could fence in up to three divisions. For this reason, only epee fencers participated in this study in order to differentiate fencers according to their division.

The sample included 33 "A" rated fencers (23.2%), 29 "B" rated fencers (20.4%), 24 "C" rated fencers (16.6%), 18 "D" rated fencers (12.7%), 23 "E" rated fencers (16.2%), and 15 "U" rated fencers (10.6%). 97.9% of the participants reported their

rating. The sample also included 29 Division I fencers (20%), 36 Division II fencers (24.8%), 47 Division III fencers (22.8%), and 33 Division I-A (22.8%) fencers.

Instrumentation

Participants completed the 25-item Performance Failure Appraisal Inventory (PFAI; Conroy, Willow, & Metzler, 2002) to provide a measure of fear of failure. It is composed of five subscales of failing: (a) fear of experiencing shame and embarrassment, (b) fear of devaluing one's self-estimate, (c) fear of having an uncertain future, (d) fear of important others losing interest and (e) fear of upsetting important others. Participants responded to items on a five point Likert Scale ranging from *do not believe at all* (-2) to *believe 50% of the time* (0) to *believe 100% of the time* (+2). Construct validity evidence has been found for this inventory (Conroy et al, 2002; Conroy & Metzler, 2003a). Internal consistency estimates range from .69 to .90 (Conroy & Metzler, 2003a). Research results show that a high level of stability for PFAI appraisal scores and general fear of failure scores (Conroy & Metzler, 2003b). Conroy & Metzler (2003b) noted that, "all models of PFAI responses exhibited strong longitudinal factorial invariance, high levels of differential stability and a relatively high degree (in practical terms) of latent mean stability" (p. 419). Cronbach alpha coefficient for this study was .81 for general fear of failure.

Participants completed the 17-item Competitive State Anxiety Inventory-2R (CSAI-2R; Cox, Martens & Russell, 2003) which measures two types of sport-related state anxiety: somatic anxiety (7 items) and cognitive anxiety (5 items). The self-confidence subscale (5 items) was also administered but was not used in data analyses. Participants responded to each item on a 4-point Likert scale ranging from *not at all* (1)

to *very much so* (4). Cox et al. (2003) conclude that, "…this revised version of the CSAI-2 (CSAI-2R) has stronger psychometric properties in terms of its factor structure than the original instrument" (p. 529). Cronbach alpha coefficients for this study were .74, and .81 for cognitive anxiety, and somatic anxiety, respectively.

Procedures

Participation in this study was voluntary. With the permission of the United States Fencing Association, a testing area was set up near the registration table. The table was noticeable to fencers who were registering, but located in a less crowded area of the venue to minimize distractions while they took the inventories.

The researcher posted flyers around the venue and talked to coaches about having their athlete's participate. The most successful recruitment method was making an announcement to the competitors while they stood in line for registration. The researcher also offered free water to participants as incentive for participation.

Research has shown that precompetitive cognitive anxiety can begin to emerge as early as several days before a competitive event (Nesti & Sewell, 1999). It remains high and fluctuates throughout competition, depending on the athlete's appraisal of their performance (Gould, Petlichkoff & Weinberg, 1984; Martens et al., 1990). Precompetitive somatic anxiety begins at low levels until 24 hours before the event starts, and then it rapidly increases immediately prior to the competition begins (Gould, Petlichkoff & Weinberg, 1984). Once the competition starts, somatic anxiety quickly decreases (Hardy & Parfitt, 1991). Research on precompetitive anxiety suggests that assessment of these emotions should occur as close as possible to competition. In fencing, there is usually a lag time of 1 to 2 hours between registration and start of

competition, so this was the most convenient time to administer the inventories. Fencing competitions often run in an unpredictable manner, therefore this administration ensured obtaining a sample of fencers who were competing within a couple of hours. In addition, administration of the surveys at this time maximized the opportunity to capture precompetitive state anxiety while not directly impeding on the competitor's warm-up routines.

Before completing the inventories, participants read the informed passive consent form. Parents read and signed consent forms for participants under the age of 18. Minors also signed assent forms. Incentive for participants was free bottles of water and a raffle to win a gift certificate for a fencing equipment company (see Appendix E). Participants needed approximately 15 to 20 minutes to complete the survey.

Data Analysis

Two simultaneous multiple regression models were assessed, one for each dependent variable: somatic and cognitive precompetitive state anxiety. Given that Division levels are not necessarily evenly spaced, this variable was considered a categorical variable. Consequently, the four Divisions were used to create three dummy variables representing Division I-A, Division II, and Division III. Division I served as the reference group, therefore, any significant contributions made by dummy variables represented adjustments based on membership in Divisions other than I. Fear of failure, experience, and three Division dummy variables were entered simultaneously as predictors in each model. A priori alpha was set at .05 for all tests.

RESULTS

Table 1 displays descriptive statistics for all variables. Experience demonstrated a significantly leptokurtic ($z = 16.13$, $p < .01$) and negatively skewed ($z = 10.9$, $p < .01$) distribution. The mode for experience was four years and one participant reported 38 years of experience, which likely caused the significant skew. In an attempt to obtain a normal distribution, the researcher experimented with forming experience categories and analyzed the data by using dummy variables. The experience categories were formed by using an arbitrary but logical method, but no significant results were uncovered.

Regressing cognitive anxiety on fear of failure, experience and Division I-A, Division II, and Division III revealed a significant effect for the overall model, F (5, 125) = 7.17, $p < .001$, $R^2 = .22$. A significant main effect for fear of failure indicated that participants who believe in adverse consequences of failure were more likely to experience high levels of cognitive anxiety prior to a competitive fencing tournament ($\beta = .44$, $p < .001$). A significant main effect for Division I-A revealed that Division I-A fencers would be predictive of higher cognitive anxiety than Division I fencers ($\beta = .20$, $p = .04$). Although, Division II, and Division III were nonsignificant, the coefficients were positive ($\beta = .13$, $p = .23$ and $\beta = .14$, $p = .18$, respectively) indicating a similar trend as Division I-A. Given a greater sample size, the predictive effects of each of these Divisions likely would have reached statistical significance. Experience was not significant predictor of cognitive anxiety.

Regressing somatic anxiety on fear of failure, experience, and Division did not reveal a significant effect for the overall model, F (5, 125) = 1.29, $p = .27$, $R^2 = .05$. Therefore, fear of failure, experience, and Division did not predict somatic anxiety.

Table 1. *Descriptive Statistics*

Variable	*N*	Min	Max	*M*	*SD*	Skewness (SE)	Kurtosis (SE)
Som Anx	141	10.00	30.00	16.82	5.17	0.78 (.20)	-0.12 (.40)
Cog Anx	141	7.14	28.57	14.91	4.33	0.34 (.20)	0.24 (.41)
FF	136	-1.83	1.38	-0.65	0.66	0.81 (.21)	0.65 (.41)
Exp	144	0.50	38.00	7.27	6.19	2.18 (.20)	6.45 (.40)

Table 2. *Regression Analysis of Precompetitive State Anxiety*

	Cognitive Anxiety			Somatic Anxiety		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Fear of Failure	2.83	0.51	.44	1.17	0.67	.15
Experience	-0.01	0.06	-.02	-0.05	0.08	-.07
Division I-A	2.04	1.01	.20	-0.05	1.32	-.00
Division II	1.22	1.01	.13	-0.27	1.32	-.02
Division III	1.33	0.99	.14	1.26	1.30	.11
Constant	15.70	0.96		17.53	1.27	

DISCUSSION

The present study examined the roles fear of failure, experience, and competitive level play in predisposing fencers to experience precompetitive cognitive and somatic anxiety before a significant competition. Overall, the findings indicated that fencers' experience of precompetitive cognitive anxiety was partially dependent on individual differences in fear of failure and the Division they competed in, but not experience. Fencers' precompetitive somatic anxiety was not contingent upon fear of failure, experience, or competitive level.

Predictors of Cognitive Anxiety

Although it has been established that trait anxiety and experience are predictors of state cognitive anxiety (Cooley, 1987; Donzelli & Dugoni, 1990; Gill & Martens, 1977; Gould et al., 1984; Hanton, Mellanlieus & Hall, 2001; Krane & Williams, 1987; McGregor & Abrahamson, 2000; Ryska, 1993; Scanlan & Passer, 1979), fear of failure had not been explored empirically as a possible predictor. The current results highlight fear of failure and particular competitive level can trigger fencers to be more inclined to have heightened cognitive anxiety before a competition.

Fear of Failure & Cognitive Anxiety

As expected, the current results suggested individuals high in general fear of failure are likely to experience high cognitive anxiety before a major fencing tournament. That is, fencers who have high fear of failure experience elevated cognitive anxiety prior to significant competition.

This research confirmed theoretical predictions that fear of failure contributes to cognitive anxiety experienced prior to significant competence evaluation (Conroy, 2001;

Conroy et al., 2002). Given the high stakes of individual sport, it is particularly not surprising that this association revealed itself in fencing. In a sport where a competitor has to outwit their opponent both physically and mentally before they do, having cognitive ties to the sport is apparent.

Based on the cognitive-motivational-relational theory of emotion (Lazarus, 1991), fear of failure is characterized as a cognitive belief system that affects the mindset of an athlete (Conroy & Elliot, 2004). Fear of failure has been conceptualized as a relatively stable cognitive schema that increases the likelihood of negative self-appraisals when a competitor is faced with competitive evaluation or contest situations (Conroy, 2004). These belief systems cause an individual to make cognitive appraisals of threat in evaluative situations (see also Passer, 1983). As such, it is logical that individuals high in fear of failure would experience cognitive angst before a competitive situation, such as Summer Nationals. This conclusion is further supported by Eysenck (1997) who found that those individuals with high anxiety have an interpretive bias which may induce them to interpret stimuli as a threat. Summer Nationals is such a tournament that would stimulate anxiety for fencers who already have a cognitive bias characteristic of trait anxiety. Those fencers who have high fear of failure are liable to view highly competitive situations as an evaluative event in which failure is probable and associated with aversive consequences. To reinforce this discovery, researchers agree that threat (which was a result of fear of failure, and the fear of negative social evaluation) had more influence on cognitive anxiety than somatic anxiety (Jones et al., 1990; Krane et al., 1992; Lane, Terry & Karageoghis, 1995). Furthermore, Hammermeister & Burton (2001) determined that endurance athletes with high anxiety showed higher perceived threat.

The current study adds to the relatively limited research dedicated to confirming the theoretical consequences of fear of failure within competitive athletics. Although theory predicts the association between fear of failure and state anxiety regardless of the nature of the sport, the current results cannot be generalized beyond individual sport athletes. These results provide an initial baseline to compare future studies. It would be interesting to compare the strength of these findings in fencing to other individual sports as well as team sports. It may be that fear of failure is a stronger predictor of cognitive anxiety for individual sport athletes than for team sport athletes given the potential accountability for failure placed on individual sport athletes.

Competitive Level & Cognitive Anxiety

This study hypothesized that competitive level would be a significant predictor of state cognitive anxiety based on previous research that reported that athletes who posses a high level of skill in their sport experience lower intensities of anxiety before a competitive situation (Campbell & Jones, 1997; Gal-Or, Tenenbaum & Shimrony, 1986). Ryska (1998) found that in a study using tennis players, ability level was significantly related to levels of competitive anxiety. This may be from the adaptation of cognitive-behavioral strategies (such as mental imagery and positive self-talk) that athletes develop and adopt over time (Anshel, 1994; Cox, 1990; Mahoney et al., 1987).

This study concluded that compared to Division I fencers, Division I-A fencers would be predicted to experience higher cognitive anxiety. Division I-A includes fencers of all ratings, while there are ratings restrictions on the other three Divisions. Fencers who qualify for Division I-A do so by placing in the top eight at their respective Sectional Championships. Although it is not the most difficult Division to compete in, it has the

largest range of fencing ability. Elite fencers and non-elite fencers can both fence in Division I-A. It is the toughest Division for non-elite fencers, which presents a highly competitive situation in which failure is most likely to take place. Non-elite fencers in Division I-A may be more inclined to experience cognitive anxiety than their elite counterparts. Although Division I is the most difficult fencing category, it is mainly comprised of elite fencers who have probably developed mental training skills to counteract any state anxiety they may experience. It is interesting to point out that of the 16% ($N = 22$) of the participants who reported having worked with a sport psychology consultant, 45.5 % ($N = 10$) of them were Division I fencers. Additionally, research has also shown that successful elite athletes have more self-confidence, better concentration skills, are less preoccupied with the threat of failure, have a more positive thought process, and are less outcome driven (Gould, et al., 1992; Gould, Weiss & Weinberg, 1981; Highlen & Bennett, 1979, 1983; Mahoney & Avener, 1977; Meyers, Cooke, Cullen & Liles, 1979). Division II and Division III fencers are considered non-elite competitors and may be less inclined to possess the mental training skills that Division I fencers may have. Ryska (1990) reasons that better players make use of cognitive-behavioral strategies, which enable them to maintain state anxiety within manageable levels. Hammermeister & Burton (2001) add that athletes with high anxiety showed less use of coping mechanisms.

Although the results demonstrated a lack of significant results for Division II and Division III when compared to Division I, there was a trend regarding prediction of cognitive anxiety. Upon examination of these results, fencers in Division I-A are two points higher on cognitive anxiety prediction than Division I fencers. Conclusions for

Division II and Division III fencers may be similar to Division I-A if given a larger sample size.

Competitive level is not a consistent predictor of state anxiety. The lack of unequivocal support for the effect of competitive level may be moderated by complexity of the sport. Track and field athletes who competed in highly complex events experienced more cognitive anxiety than those who competed in lower complexity events (Krane & Williams, 1994). However, in a study using high school gymnasts, difficulty of routines had no impact on levels of state anxiety (Matheson & Mathes, 1991).

Experience & Cognitive Anxiety

Contrary to Gould et al. (1984) who found higher experience level was associated with low cognitive anxiety levels, the present study revealed no relationship between fencing experience and cognitive anxiety. Given that fencing is an individual sport, those fencers who utilize cognitive-behavioral skills to combat anxiety are better able to perform well in competitive situations despite high anxiety. These personal distinctions that each fencer has are developed from quality of training, personality type, athletic ability, and what kinds of resources are available (such as a coach who has a background in sport psychology, which is rare in fencing). Length of time in sport does not guarantee the development of the skills necessary to counter the ill affects of precompetitive anxiety. Martens (1977) further supported this conclusion when he found that the cumulative effect of an individual's competition history may contribute to the development of trait anxiety, though this is largely due to individual differences. Research has shown that an athlete's personal dispositions such as attribution style, locus

of control, and pain tolerance also play a role in how an athlete experiences anxiety in competitive situations (Anshel, 1994; Cox, 1990; Mahoney et al., 1987).

This study solely concentrated on competitive fencing, which is a highly complex, individual sport. Being able to figure out how to hit an opponent with a weapon involves the use of mental preparation. Throughout the experience of the researcher as a long time competitor and assistant varsity coach, it is safe to say that the use of sport psychology, cognitive-behavioral techniques, and sound coping mechanisms are not regularly taught to fencers. This may be due to the fact that many fencing coaches lack the proper educational background and training that would prepare them with the knowledge of sport psychology that could be passed on to their students. The lack of mental skills training in fencing could be a contributing factor to the finding that fencers of all competitive levels experience cognitive anxiety. This is especially true for fencing, a sport in which experience does not necessarily contribute to better mental preparation in competition. Only 16% of the participants in this study reported having worked with a sport psychology consultant. Also, experience does not attribute to success in fencing, but rather quality of preparation.

When considering an expanded scope of literature regarding the effect of experience on cognitive anxiety, the conclusions are inconsistent. For instance, in a study using “sub-elite” recreational league tennis players, Ryska (1998) found that experience was not significantly related to competitive anxiety. In conjunction with the findings of this study, it may be concluded that athletes of all experience levels are prone to developing anxiety.

Sport psychology consultants should be aware when dealing with an athlete that their length of time in their sport does not make them more or less prone to experiencing cognitive anxiety. Athletes of all experience levels are prone to suffer from cognitive anxiety.

Predictors of Somatic Anxiety

This study concluded that fear of failure, competitive level, and experience were not significant predictors of somatic anxiety, contrary to expectations. The disparity between predicting cognitive anxiety and somatic anxiety was not entirely surprising. Several scholars (Jones et al., 1990; Krane et al., 1992; Lane et al., 1995) concluded that threat has more of a cognitive influence on a competitor, rather than a somatic influence.

The design of this study may have contributed to the failure to show a significant relationship between the variables and somatic anxiety. Perhaps the method of capturing somatic anxiety was timed incorrectly. Research has found that somatic anxiety remains at relatively low levels until 24 hours before an event. It then peaks immediately prior to a performance (Martens et al., 1990). Also, somatic anxiety will quickly decrease at the onset of competition (Gould, Petlichkoff & Weinberg, 1984). For this study, the closest administration of the surveys was at least an hour before the event due to possible inconvenience to the athlete. Although the surveys were administered as close to the start of the competitive event as possible, it may have been too far in advance to capture the onset of somatic anxiety. It would be highly intrusive to the fencers to administer the surveys at a time when somatic anxiety would most likely be at its peak.

In a study focused on fencers, Hall & Kerr (1998) examined the predictors of achievement anxiety from a social-cognitive perspective. The participants took the

surveys one week, two days, one day, and thirty minutes before the competition. Through this method, they were able to contrast the levels of somatic anxiety leading up to the event. They were able to find that low perceived ability was a significant predictor of somatic anxiety across each time period, while win orientation significantly predicted somatic anxiety only within thirty minutes prior to the start of competition. In contrast to this study, somatic anxiety was measured once, one hour prior to the competition. There was no other means to see if there was a difference in somatic anxiety levels at differing times leading up to the event. Additionally, there may have been development of further somatic anxiety after the completion of the surveys but before fencing had commenced.

Scholarship has documented different antecedents of cognitive and somatic anxiety (Gould et al, 1984; Jones et al, 1990). There are many studies that have found there is an ample amount of antecedents for cognitive anxiety, but these same antecedents do not predict somatic anxiety. These predictors include an athlete's perception of readiness, attitude toward previous performances, and use of outcome goals, the inability to obtain goals, perceived ability, and ego orientation (Hall & Kerr, 1998; Hall, Kerr & Matthews, 1998; Jones, Swain & Cale, 1990; Krane, Williams & Feltz, 1992). Past research has determined that previous performance and gender are predictors of somatic anxiety (Gould et al., 1984; Jones & Cale, 1989; Jones et al., 1991; Krane & Williams, 1987; Krane & Williams, 1994).

Experience was not found to be a significant predictor of somatic anxiety in this study. That is, fencers of any experience level are prone to developing somatic anxiety. No matter how long a fencer has been competing in the sport, the onset of competition may continually create a physiological reaction.

The definition of experience in this study may contrast with how other researchers' definitions, and thereby affecting the reliability of previous research for this study of which the hypothesis was formulated. It has been found in previous studies that previous performance is a predictor of somatic anxiety. In this study, experience was operationally defined as length of time in sport, which is not based on preceding results. Krane & Williams (1987) determined that athletes who had better previous performances had lower somatic anxiety than athletes who had less successful performances in the past. It is possible that athletes with favorable results could have less experience than those who have less favorable results, and vice versa.

Future Research

Further research is needed to supplement the results of this study. This includes using multiple sports and athletes of varying levels of competition. Comparing fear of failure and state anxiety in individual and team sports could be an additional topic of research and may also present dissimilar, or even similar, findings. Further research may consider studying the differences in coping styles of elite and non-elite athletes. The researcher encourages the study of fear of failure and precompetitive anxiety to help establish a base of knowledge for sport psychology consultants to further assist their athletes, especially in the area of performance enhancement.

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APPENDIX A

RESEARCH HYPOTHESES, LIMITATIONS, DELIMITATIONS, ASSUMPTIONS AND DEFINITIONS

Research Hypotheses

1. Fear of failure will be positively associated with cognitive anxiety.
2. Experience will be negatively associated with cognitive anxiety.
3. Division will be negatively associated with cognitive anxiety.
4. Fear of failure will be positively associated with somatic anxiety.
5. Experience will be negatively associated with somatic anxiety.
6. Division will be negatively associated with somatic anxiety.

Limitations

1. Fencers competing in Summer National Championships may experience a heightened level of fear of failure and/or state anxiety (as opposed to competing in a local tournament where the stakes are not as high).
2. Motivation and interest level cannot be controlled.
3. Honesty cannot be controlled.

Delimitations

1. Deliberate sample will be used in order to target the appropriate participants.
2. Only epee fencers will be used in the sample.
3. Only fencers competing in Summer National Championships will be studied.
4. The sample may represent the Southeast more than other parts of the country due to that the Summer National Championships are being held in Atlanta, Georgia. Fencing is an expensive sport (entry fees alone can run more than a hundred dollars), so those who

live far away may not spend the money to travel to a tournament where they may not achieve good results.

5. This study will only use fencers; therefore, results may not generalize to other sports.

6. The variables in this study are only some of the many predictors of state anxiety.

Assumptions

1. Participants will answer honestly.

2. Fear of failure and state anxiety are problems in fencing.

Definitions

1. *Fear of failure:* "Appraising threat in evaluative situations with the potential for failure because those situations activate cognitive schemas or beliefs associated with the aversive consequences of failing. (Conroy, 2004)" Those aversive consequences are (a) experiencing shame and embarrassment, (b) devaluing one's self-estimate, (c) having an uncertain future, (d) important others losing interest, and (e) upsetting important others (Conroy, Willow & Metzler, 2002).

2. *State Anxiety:* apprehension that fluctuates according to the perceived threat in the immediate situation (Spielberger, 1966).

3. *Cognitive Anxiety:* negative thoughts, such as self-doubt and negative self-talk (Alexander & Krane, 1996).

4. *Somatic Anxiety:* physiological arousal caused by threatening situations, such as rapid heart rate, tense muscles and/or butterflies in the stomach (Alexander & Krane, 1996).

5. *Trait anxiety:* overall level of anxiety that is consistent across time an across variable situations within a given individual (Spielberger, 1966)

6. *Division:* Divisions are competition categories based on ratings. Fencing ratings are an ability level measure based on previous success in competition. They are earned by defeating higher rated fencers and awarded according to year. They range from "A" (highest) to "E" (second lowest). Lowest rating is "U" for unrated. Ratings are assigned to weapon, not the person. Division I includes A, B & C ratings, Division II includes C through U ratings, Division III includes D through U ratings and Division I-A is all ratings. Fencers who compete in Division I-A qualify by placing 1-8 in their respective Sectional Championships (no matter what rating they are). For example, a fencer could be a B05 (B rating earned in 2005) in epee and fence in Division I and also have an E06 in sabre and fence in Division III.
7. *Epee:* Fencing has three weapons: foil, sabre and epee. Each weapon has a different target area and different rules for getting a touch. Fencers can only fence each other using the same weapon. Epee is the weapon in which the whole body is valid target area. Fencers must hit their opponent with the tip of their weapon with at least 750 grams of pressure.
8. *Experience:* Length of time in sport.

APPENDIX B

EXTENDED LITERATURE REVIEW

The multidimensional anxiety theory is comprised of different types of anxiety. Cognitive anxiety is experienced as negative expectations such as worry or pessimistic thoughts (Jones, 1995). Somatic anxiety is felt as physical arousal of the autonomic system and unpleasant feelings such as nervousness and tension (Jones, 1995). Symptoms of somatic anxiety include butterflies in the stomach, tense muscles, and rapid heartbeat (Alexander & Krane, 1996). Trait anxiety is a predisposition to perceive situations as threatening while state anxiety is when apprehension fluctuates according to the perceived threat in the immediate situation such as a competition (Spielberger, 1966).

Early research and theory development conceptualized that trait anxiety predisposes a person to experience state anxiety (Krane & Finch, 1991; Spielberger, 1966). Vealey (1990) found that competitive trait anxiety is a consistent predictor of both cognitive and somatic anxiety. In addition, individuals with high trait anxiety will interpret state anxiety as debilitating (Hardy, Jones & Gould, 1996). Research has shown that cognitive anxiety can be induced by low performance expectations (Feltz, 1992). Krane, Williams & Feltz (1992) found that golfers who had poor performance expectations in a competition had higher cognitive anxiety than golfers who had successful performance expectations.

In an athletic competition setting, trait anxiety can be devastating to an athlete and their performance achievements. This has been found in many different sports. In a study comparing successful runners and non-elite runners, it was found that runners with high trait anxiety showed more state anxiety than runners with low trait anxiety (Donzelli, &

Dugoni, 1990). In a study with wrestlers, those with high trait anxiety reported more state anxiety than wrestlers with low trait anxiety (Gould, Horn, & Spreeman, 1983). The research of Krane & Williams (1987) using golfers concluded that competitive trait anxiety was a predictor of cognitive and somatic anxiety. A study using male collegiate soccer players concluded that participants with high "competitive trait anxiety symptoms responded with greater state levels than those [with] low trait anxiety (Hanton et al., 2002, pp.1131)." The same study also concluded that:

> …performers high in trait concentration disruption, and subsequently easily distracted, will be unable to maintain focus in the presence of increased state anxiety, adopting a negative debilitating view of competitive state anxiety symptoms…As high trait anxious performers typically respond with strong physiological levels, in addition to experiencing high cognitive state symptoms, they are more likely to be susceptible to performance catastrophes, and subsequently expected to perceive competitive state anxiety symptoms experienced as more debilitating to performance then [sic] their low trait anxious counterparts (pp.1133).

There is a similar finding in a study using collegiate tennis players. It was reported that those who had low anxiety levels were not affected by negative circumstances (Covassin & Pero, 2004).

Research has also showed that experience and competitive level also are indicative of anxiety intensity. Gould, Horn & Spreeman (1983) found that wrestlers who had less experience had higher trait anxiety than more experienced wrestlers. In similar studies using gymnasts (Mahoney & Bennett, 1979), racquetball players (Meyers, Cooke, Cullen & Liles, 1979) and divers (Highlen & Bennett, 1983), it was concluded that successful elite athletes had lower levels of anxiety during competition than did the less successful elite athlete.

General fear of failure can affect athletes by creating high levels of cognitive disruption, somatic anxiety, worry, sport anxiety and low levels of optimism (Conroy, Willow & Metzler, 2002). Furthermore, low trait optimism scores have been connected with greater levels of anxiety (Change & Bridewell, 1998). Lazarus (1991) concludes that in the model of cognitive-motivational-relational theory, fear of failure can result when beliefs about failing are activated by situations in which failure is possible. These types of situations include highly competitive categories, such as Division I in a national fencing competition.

Martens et al. (1990), the developer of the CSAI-2, found that a competitor who has high trait anxiety is more likely to perceive situations as threatening and then exhibit more state anxiety as a result. In a study examining runners, Donzelli & Dungoni (1990) found that if a competitor is continually concerned about becoming potentially embarrassed, it is likely that their anxiety levels will remain high during the competition. Eklund (1996) found a strong correlation between negative thoughts (such as failure expectancies) and low levels of performance.

Conroy assesses that fear of failure is a type of trait anxiety that prompts an individual to experience state anxiety. Conroy & Elliot (2004) note, "The belief systems predispose an individual to make appraisals of threat and experience the state anxiety that is associated with fear of failure in evaluative situations" (p. 272). This type of trait anxiety can be measured by using the PFAI, as the five subscales have been shown to be strongly related to trait anxiety and trait performance anxiety measures (Conroy, 2001; Conroy, Willow, & Metzler,

2002). Therefore, fear of failure can be experienced in situations in which a person perceives failure as a negative consequence. Conroy & Elliot (2004) note, "Fear of failure represents a dispositional tendency to experience apprehension and anxiety in evaluative situations because individuals have learned that failure is related with aversive consequences" (p. 273).

Classic achievement motivation theorists and researchers conceptualized fear of failure as a motive to avoid failure (Atkinson, 1966; McClelland, et al., 1953; Murray, 1938). Birney, Burdick & Teevan (1969) stated that three consequences of fear of failure are a devaluation of one's self-estimate, non-ego punishment, and reduction in one's social value. Fear of failure evolved to a hierarchal, multidimensional model of aversive consequences (Conroy, 2001; Conroy, Metzler & Hofer, 2003; Conroy, Willow & Metzler, 2002). Conroy et al. (2002) made this perspective based Lazarus' (1991) cognitive-motivational-relational theory of emotion. The PFAI has made it possible for researchers to acquire data on fear of failure using a reliable and valid instrument. It measures fear of failure on five subscales of aversive consequences and a general score of fear of failure (Conroy et al., 2002).

The earliest roots of fear of failure emerged from the study of achievement motive in 1890 by James (p. 309-311, as cited by Elliot & Church, 1997). In the 1930's, the first model of achievement motivation included the theory of resultant valence, which accounted for aspiration behavior (Hoppe, 1930). That is, feelings of success and failure are dependent on attainment or nonattainment of the level of inspiration (Hoppe, 1930).

Murray (1938) theorized that there are two achievement related needs, which are based psychogenic needs. The need for achievement is the desire for success and the need

for infavoidance is the desire to avoid failure. This research became a foundation for future researchers for achievement motive and devised more reliable measurements for recognizing needs (i.e. Thematic Apperception Test, TAT).

The Need Achievement Theory was developed by McClelland, Atkinson, Clark & Lowell (1953). This "classic", scientific and complex theory is derived from Lewin's theory of resultant valence and is an important link in the theoretical framework of fear of failure. Need for achievement is "the capacity to feel pride in accomplishment", while fear of failure is "the capacity or propensity to experience shame upon failure" (Atkinson & Feather, 1996, p. 360). A person experiencing fear of failure is motivated to either avoid competitive achievement situations or tasks of intermediate difficulty. This person would choose an easy task that would ensure success or a very difficult task to guarantee failure. If they know failure is imminent, their anxiety level is low because they are expecting to fail. This is opposed to an achievement orientated person who feels positive motivation is strongest in situations that success and failure are at equal odds. Atkinson & Feather (1966) state that, to "avoid undertaking an activity that is expected to lead to failure…this avoidant tendency…dampens the influence of motivation to achieve success and extrinsic positive motivational tendencies to undertake some task" (p.19).

The progression of fear of failure continued in the late 1960s by the research of Birney, Burdick & Teevan. They define fear of failure as the possibility of nonattainment of an achievement standard which can produce fear (Birney, Burdick & Teevan, 1969). Their research proposed three consequences of fear of failure. First, a "devaluation of one's self-estimate" states that the threat of changing one's belief in one's self, usually in a negative direction (Conroy, Pocwardowski & Henschen, 2001). When a competitor

thinks too highly of themselves, they may be afraid that a loss will slander their reputation. This, in turn, places a competitor in a situation that he or she perceives as failure. Second, "non-ego punishment" has similar penalties, but "the punishment is not one's self-estimate (Conroy, Pocwardowski & Henschen, 2001). If a reward for achievement is not attained, an athlete may believe that they wasted their time and effort when they tried to achieve those rewards (Stefanski, 200). Lastly, a "reduction in one's social value" is a threat in which others will not view the athlete as important player (Conroy, Pocwardowski & Henschen, 2001). This is when a competitor worries that others will think less of them if they do not achieve success, especially coaches, parents, scouts, agents, and/or team members (Stefanski, 2002).

Birney, Burdick and Teevan (1969) identified that fear of failure influences a person's choice of task, performance, conformity, aspiration and risk preference and subjective experience in achievement situations. They also attribute fear of failure to cause an individual to chose easy tasks, avoid activities that measure skill (competition), make up excuses for their performance (which removes personal responsibility) and to decrease the value of a skill and/or competition. Other effects of fear of failure include social desirability, hope, optimism, fear of success, worry, concentration disruption and somatic and cognitive anxiety (Conroy and Metzler, 2003).

Each consequence of fear of failure can be demonstrated in various ways. The fear of reduction in one's self-estimate is shown as increasing the probability of attaining the standard, avoiding a precise self-estimate, rejecting the performance of a measure of the skill, rejecting responsibility, reducing the importance of an attribute, not attempting challenge all together, misjudging performance and sensitivity of potential. Individuals

with this type of fear will have a preference for "noncomparable" groups, easy tasks, privacy, imprecise and unreliable performance measures, vague achievement standards, and practice and games (as opposed to competition). Those who have non-ego punishment may try to decrease the chance of failure by increasing their practice and effort level and perform in situations that guarantee success (Birney, Burdick & Teevan, 1969). Individuals with the fear of loss of social value may inform others of attainment, make excuses, and have level-of-aspiration statements.

Lazarus' (1991) cognitive-motivational-relational theory is an important step towards the contemporary multidimensional theory of fear of failure. He argues that is it connected to assessment of threats to an individual's ability to accomplish goals when one fails in a performance (Conroy, Willow & Metzler, 2002). Conroy (2001) explains this theory as, "These appraisals are assessments (i.e. cognitive) about how a perceived change in the environment (i.e. relational) affects one's ability to accomplish a personally meaningful goal (i.e. motivational)" (p.169). An individual first anticipates failure as a possibility or that they are failing. Then, the individual concludes that failure in that situation will bring aversive consequences (Conroy, Metzler & Hofer, 2003).

The hierarchical model of achievement motivation was developed by Elliot (1997). This goal-orientated theory combines approach-avoidance goals and mastery-performance goals. From this, four achievement goals are derived. The first is the mastery-approach goal (MAp), which is a positive predictor of intrinsic motivation. The second is the mastery-avoidance goal (MAv), which is a positive predictor of state anxiety. The third goal, performance-approach goal (PAp,) is a positive predictor aspiration and performance. The fourth goal of performance-avoidance goal (PAv) was

found to be a positive predictor of state anxiety and procrastination and a negative predictor of intrinsic motivation and performance (Elliot, 1997). Elliott (1997) found that fear of failure positive predicted avoidance goals and had a weak correlation with PAp goals. Also, he found no significant relationship between fear of failure and mastery-approach goals.

Conroy has continued the research of fear of failure by continuing the Lazarus' theory and developed the multidimensional theory of fear of failure. From this theory, Conroy developed of the Performance Failure Appraisal Inventory (PFAI) to measure the fear of failure. By using Lazarus' cognitive-motivational-relational theory of emotion, Conroy associates fear of failure with "an individual's inability to accomplish personal goals" (Stefanski, 2002, p. 41).

Conroy, Poczwardowski & Henschen (2001) interviewed athletes and performing artists to develop the categories to measure fear of failure. They found that performers internalize their criteria for defining success and failure. This is done when the participants viewed themselves in a negative way. The participants expressed feelings of losing control, emotional cost, punitive beliefs about one's self, unfulfilled commitment, and embarrassing self-presentation (Conroy, Poczwardowski & Henschen, 2001).They defined failure as 10 aversive consequences, which were reduced down to five. The results of this study lead to the development of the five subscales in the PFAI: (1) experiencing shame and embarrassment, (2) devaluing one's self-estimate, (3) having an uncertain future, (4) losing social influence, and (5) upsetting important others (Conroy, Willow & Metzler, 2002).

It has been shown that the development of fear of failure is rooted in the perception of the athletic experience. This is influenced by the interaction between a child, their coach, their parent(s), and their friends (Conroy, 2002). In a study using junior elite wrestlers, Gould, Horn & Spreemann (1983) found that 11% of the athletes found that the concern over evaluation by important others was a source of stress. In other words, this study found that participants demonstrated a type of fear of failure that is measured by the PFAI as a source of stress.

The behavioral effects of fear of failure can be extremely debilitating to athletes and performers. It creates anxiety that can affect performance potential and goal achievement (Conroy, 2001). Fear of failure is also associated with being a form of precompetitive anxiety (Conroy, 2001). Some of the adverse consequences include ergogenic drug abuse, athletic stress, burnout and dropout (Anshel, 1991; Gould, Horn, & Spreeman, 1983; Orlick, 1972; Rainey, 1995). It can also prevent an athlete from realizing their full potential (Conroy, Willow & Metzler, 2002). Other negative repercussions include making specific avoidance-based goals, self-handicapping, decreased intrinsic motivation, and feeling shame and embarrassment (Conroy & Elliot, 2004; Elliot & Church, 1997).

Though fear of failure is a psychological phenomenon, it can trigger physical anomalies as well. It has been associated with anorexia, clinical headache disorders and male sexual dysfunction (Bruce & Barlow, 1990; Passchier, Van der Helm & Orlebecke, 1984; Weeda, Winny & Drop, 1985).

This study will utilize competitive division as a predictor of state anxiety. In this study, Division I (mainly A and B rated fencers; some C rated fencers) and Division I-A

are considered elite while Division II and Division III (C, D, E and U rated fencers) are considered non-elite. Experience is operationally defined as length of time in sport.

Through the substantial body of research, some of the predictors of competitive anxiety are performers' skill level and year of experience in sport (Fenz & Jones, 1972; Heckhausen, 1990). Meyers et al. (1979) reported that racquetball players who had lower skill levels indicated higher levels of anxiety during competition. In a study using gymnasts, those that qualified for the Olympics were less anxious during competition than the competitors that did not qualify (Mahoney & Avener, 1977). Gould, Horn & Spreeman (1983) determined that experience was a significant predictor for anxiety. They studied wrestlers and concluded that the younger wrestlers experienced more trait anxiety than the more experienced wrestlers.

Ryska (1998) notes that ability level (i.e. Division) is significantly related to decreasing competitive anxiety. He attains this to the active use of cognitive-behavioral strategies by better players, and as a result, they are able to affectively maintain a desirable level of state anxiety.

Competitive trait anxiety can develop from the cumulative effect of both positive and negative consequences gained over the individual's competition history (Martens, 1977). Individuals with experiences a history of failure and/or negative evaluation appear to have high trait anxiety (McGregor &Abrahamson, 2000). Thus, inexperienced competitive athletes who have a history of repeated failure may have high trait anxiety, which puts them at risk to experience heightened state anxiety. Highlen & Bennett (1983) found that divers regarded lack of experience to be a major indicator toward poor performance.

Previous studies have shown that although elite and non-elite athletes both experience the same intensity of anxiety, elite athletes are better able to facilitate this response (Jones, Hanton & Swain, 1994). Hanton & Connaughton (2002) found that although elite performers initially view cognitive state anxiety as debilitative, they use cognitive strategies to overcome negative thoughts and change them to positive ones.

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APPENDIX C

DEMOGRAPHIC QUESTIONNAIRE

DO NOT WRITE YOUR NAME ANYWHERE ON THIS PACKET!!!

THANK YOU

Gender: M F

Rating: _____

I am competing in Division I I-A II III

How long have you been fencing for? _____ year(s)

How old are you? _____ years

Have you ever worked with a sport psychology consultant? Yes No

APPENDIX D

PERFORMANCE FAILURE APPRAISAL INVENTORY

-2	-1	0	+1	+2
Do not		Believe 50%		Believe
Believe at all		of the time		100%of the time

Read each statement below and think how *often* you believe each is true when you are competing. Use the rating scale to indicate how much you believe each statement applies to you.

_____ 1. When I am failing, it is often because I am not smart enough to perform successfully.
_____ 2. When I am failing, my future seems uncertain.
_____ 3. When I am failing, it upsets important others.
_____ 4. When I am failing, I blame my lack of talent.
_____ 5. When I am failing, I believe that my future plans will change.
_____ 6. When I am failing, I expect to be criticized by important others.
_____ 7. When I am failing, I am afraid that I might not have enough talent.
_____ 8. When I am failing, it upsets my "plan" for the future.
_____ 9. When I am failing, I lose the trust of people who are important to me.
_____ 10. When I am not succeeding, I am less valuable than when I succeed.
_____ 11. When I am not succeeding, people are less interested in me.
_____ 12. When I am failing, I am not worried about it affecting my future plans.
_____ 13. When I am not succeeding, people seem to want to help me less.
_____ 14. When I am failing, important others are not happy.
_____ 15. When I am not succeeding, I get down on myself easily.
_____ 16. When I am failing, I hate the fact that I am not in control of the outcome.
_____ 17. When I am not succeeding, people tend to leave me alone.
_____ 18. When I am failing, it is embarrassing of others are there to see it.
_____ 19. When I am failing, important others are disappointed.
_____ 20. When I am failing, I believe that everybody knows I am failing.
_____ 21. When I am not succeeding, some people are not interested in me anymore.
_____ 22. When I am failing, I believe that my doubters feel they were right about me.
_____ 23. When I am not succeeding, my value decreases for some peoples.
_____ 24. When I am failing, I worry about what others think about me.
_____ 25. When I am failing, I worry that others may think I am not trying.

APPENDIX E

PFAI SCORING TEMPLATE

Fear of Experiencing Shame & Embarrassment (FSE)

(____ + _____ + _____ + _____ + _____ + _____) = _____ / 7 = _____

Item # 10 15 18 20 22 24

Fear of Devaluing One's Self-Estimate (FDSE)

(_____+ _____ + _____ + _____) = _____ / 4 = _____

Item # 1 4 7 16

Fear of Having an Uncertain Future (FUF)

(_____ + _____ + _____ + _____) = _____ / 4 = _____

Item # 2 5 8 12

Fear of Important Others Losing Interest (FIOLI)

(_____ + _____ + _____ + _____ + _____) = _____ / 5 = _____

Item # 11 13 17 21 23

Fear of Upsetting Important Others (FUIO)

(_____ + _____ + _____ + _____ + _____) = _____ / 5 = _____

Item # 3 6 9 14 19

General Fear of Failure

(_____ + _____ + _____ + _____+ _____) = _____ / 5 = _____

Scale FSE FDSE FUF FIOLI FUIO

APPENDIX F

COMPETITIVE STATE ANXIETY INVENTORY – 2R

Directions: A number of statements that athletes have used to describe their feelings before a 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 one statement, but choose the answer which describes your feelings right now.

Not at all	Somewhat	Moderately So	Very much so
1	2	3	4

_____ 1. I feel jittery.
_____ 2. I am concerned that I may not do as well in this competition as I could.
_____ 3. I feel self-confident.
_____ 4. My body feels tense.
_____ 5. I am concerned about losing.
_____ 6. I feel tense in my stomach.
_____ 7. I'm confident I can meet the challenge.
_____ 8. I am concerned about choking under pressure.
_____ 9. My heart is racing.
_____ 10. I'm confident about performing well.
_____ 11. I'm concerned about performing poorly.
_____ 12. I feel my stomach sinking.
_____ 13. I'm confident because I mentally picture myself reaching my goal.
_____ 14. I'm concerned that others will be disappointed with my performance.
_____ 15. My hands are clammy.
_____ 16. I'm confident of coming through under pressure.
_____ 17. My body feels tight.

APPENDIX G

INSTITUTIONAL REVIEW BOARD

Personnel. Elizabeth Athanas, graduate student in the Department of Health & Kinesiology, Sport Psychology. Advisor: Jonathan Metzler, Department of Health & Kinesiology.

Purpose. The purpose of this study is to investigate that fear of failure, experience and division are predictors of state anxiety in USFA epee fencers.
The research hypotheses are as follows:
1. Fear of failure will be positively associated with cognitive anxiety.
2. Experience will be negatively associated with cognitive anxiety.
3. Division will be negatively associated with cognitive anxiety.
4. Fear of failure will be positively associated with somatic anxiety.
5. Experience will be negatively associated with somatic anxiety.
6. Division will be negatively associated with somatic anxiety.

Current literature reviewed for this topic include the various research studies of Conroy (Conroy, D. E., 2001; Conroy, D. E. & Metzler, J. N., 2003; Conroy, D. E., Poczwardowski, A. & Henschen, K. P., 2001; Conroy, D. E., Willow, J. P. & Metzler, J. N., 2002). By using the research that lead to development of the Performance Failure Appraisal Inventory, this study will use current information regarding how the PFAI accurately measures fear of failure. Other literature reviewed for this topic includes Cox, Martens & Russell (2003). This study will utilize the Competitive State Anxiety Inventory-2R (CSAI-2R) to test state anxiety.

Participants. Participants will be United States Fencing Association epee fencers. The approximate number of participants is 200. This study will use both men and women and the average age is unknown. The only USFA age requirement for competing in these categories is that the fencer must be over the age of 13. Participation is voluntary. With the permission of the United States Fencing Association, a testing area will be set up near the registration table on the days of competitions. The table will be noticeable when fencers are registering, but located in a less crowded area of the venue to minimize distractions. There is usually a lag time of 1 to 2 hours before competitive events start, so the best time to administer the PFAI and CSAI-2R will be before the event starts. This way, participation in the study would not interfere with their warm-up routines and the sample size can be maximized. Before completing the inventories, participants will read the passive informed consent form. Parents will read and sign consent forms for participants under the age of 18. Incentive to participate will be a raffle to win a gift certificate for a fencing equipment company. All of the equipment vendors are at this competition. Confidentiality will be upheld because a passive informed consent form will be used.
Limitations of this study include that motivation and interest level cannot be controlled and fencers competing in Summer National Championships may experience a heightened level of fear of failure and/or state anxiety (as opposed to competing in a local

tournament where the stakes aren't as high). Delimitations include that a deliberate sample will be used in order to target the appropriate participants, only epee fencers will be used in the sample, only fencers competing in Summer National Championships will be studied, the sample may represent the Southeast more than other parts of the country due to that the Summer National Championships are being held in Atlanta, Georgia, this study will only use fencers; therefore, results may not generalize to other sports, and the variables in this study are only some of the many predictors of state anxiety. Assumptions of this study are that participants will answer honestly and fear of failure and state anxiety is a problem in fencing.

Methodology (Procedures). The Performance Failure Appraisal Inventory (PFAI) will be used to measure fear of failure. It is composed of five subscales of failing: (a) fear of experiencing shame and embarrassment, (b) fear of devaluing one's self-estimate, (c) fear of having an uncertain future, (d) fear of important others losing interest and (e) fear of upsetting important others. I will be using the PFAI long form, which has 25 items and a five point Likert Scale. Responses ranging from *do not believe at all* (-2) to *believe 50% of the time* (0) to *believe 100% of the time* (+2) (Conroy, 2003). Construct validity evidence has been found (Conroy & and internal consistency estimates range from .69 to .90 (Conroy & Metzler, 2003). Research shows that a high level of stability for PFAI appraisal scores and general fear of failure scores (Conroy & Metzler, 2003b). Conroy & Metzler (2003b) noted that, "all models of PFAI responses exhibited strong longitudinal factorial invariance, high levels of differential stability and a relatively high degree (in practical terms) of latent mean stability" (p. 419).

The 17-item Competitive State Anxiety Inventory-2R (CSAI-2R; Cox, Martens & Russell, 2003) will be used to measure sport-related state anxiety. The CSAI-2R consists of three subscales: somatic anxiety (7 items), cognitive anxiety (5 items), and self-confidence (5 items). Participants will respond to each item on a 4-point Likert scale ranging from *not at all* (1) to *very much so* (4). Cox et al. (2003) conclude that, "…this revised version of the CSAI-2 (CSAI-2R) has stronger psychometric properties in terms of its factor structure than the original instrument" (p. 529). Cronbach alpha coefficients for validation were .81, .81, and .86 for cognitive anxiety, somatic anxiety, and self-confidence, respectively (Cox, Martens & Russell, 2003).

Research involving minors. Parents will read and sign consent forms for participants under the age of 18.

Deception & Risk. There is no deception or risk in this study.

Medical procedures. There are no medical procedures in this study.

APPENDIX H
INFORMED PASSIVE CONSENT FORM

DEPARTMENT OF HEALTH & KINESIOLOGY

Title of Project: Fear of Failure, Experience, and Division as Predictors to State Anxiety in USFA Epee Fencers

1. Principle Investigator: Elizabeth Athanas, Graduate student, School of Public Health, 1116 Woodland Drive, Statesboro, GA 30458, (912) 678-1717, Elizabeth_h_athanas@ georgiasouthern.edu. Other investigator: Jonathan N. Metzler, P. O. Box 8076, Statesboro, GA 30460, (912) 681-0200 jmetzler@georgiasouthern.edu

2. **Purpose of Study:** The purpose of this study is to investigate that fear of failure, experience, and division are predictors to state anxiety in USFA epee fencers.

3. **Procedures to be followed:** You will be asked to fill out a demographics questionnaire, a 25 question survey, and a 17 question survey.

4. **Risks and benefits:** There are no known risks for participating in this study. You might learn more about yourself by participating in this study. This research might provide a better understanding of fear of failure and state anxiety.

5. **Duration:** It will take approximately 10 minutes to complete the questions.

6. **Statement of confidentiality:** Your identity will be completely hidden and there will be no way for anyone to connect your identity to your answers. Be sure not to write your name anywhere on any of the surveys.

7. **Right to Ask Questions:** You can ask questions about the research. The person in charge will answer your questions. Contact Elizabeth Athanas at (912) 678-1717. If you have questions about your rights as a research participant, contact the Office of Research Services and Sponsored Programs by email at oversight@georgiasouthern.edu or phone at (912) 681-7758.

8. **Compensation:** There is no monetary compensation for participating in this study. However, after participants have completed the questionnaires, they are able to enter into a raffle to win a gift certificate to fencing.net.

9. **Voluntary Participation:** You do not have to participate in this study. You can end your participation at any time by telling the person in charge. You do not have to answer all of the questions you do not want to answer. There is no penalty for deciding not to participate in this study, though you will not be able to enter the raffle. You may decide to participate any further and simply withdraw.

10. **Minors:** If you are under the age of 18, you must obtain parental consent prior to participating in the study. Though your parents may give permission for you to be a participant, you have the right to refuse participation.

11. **Consent:** Completion and return of the questionnaire materials implies that you have read the information and consent to participate in the research.

APPENDIX I

PARENTAL INFORMED CONSENT

Dear Parent or Guardian:

This study is being conducted at the 2006 Summer National Championships. The purpose of this study is to fear of failure, experience, and division as predictors of state anxiety in USFA epee fencers. It is being done to collect information for a research paper. We are asking your child to complete two forms that asks about anxiety that your child may or may not have.

If you give permission, your child will have the opportunity to participate in this study by filling out a 25 question survey and a 17 question survey. This study will take approximately 10 to 15 minutes for your child to complete.

Your child's participation in this study is completely voluntary. There are no known risks or benefits for your child to participate in this study; however your child will be told that he or she may stop participating at any time without any penalty. I encourage your child to complete every question on the questionnaire. If they have any questions, they are encouraged to ask them. Your child may refuse to participate even if you agree to his or her participation.

In order to protect the confidentiality of your child, the signed consent form will not be attached to the completed form. Your child should not write their name on the surveys. All information pertaining to the study will be kept in a locked filing cabinet in an office at Georgia Southern University.

If you have any questions or concerns regarding this study at any time, please feel free to contact Elizabeth Athanas, Sport Psychology Graduate student, at (912) 678-1717.

If you are giving permission for your child to participate in the experiment, please sign the form below. Thank you very much for your time.

Investigator's Signature_____

Child's Name: _____

Parent or Guardian's Signature: _____

Date: _____

APPENDIX J

MINOR'S ASSENT

Hello,

I am Elizabeth Athanas, a graduate student at Georgia Southern University and I am conducting a study on the anxiety that epee fencers may experience.

You are being asked to participate in a project that will help me learn about being afraid to fail and being nervous in particular situations. If you agree to help, you will fill out four surveys; one is 25 questions long, one is 17 questions long, and one is six questions long. You will read the statement and pick a response that rates how much it applies to you. It will take about fifteen minutes for you to help me.

You do not have to help me with this project. You can stop helping me whenever you want to. If you start filling out the survey and then decide that you do not want to fill it out anymore, you can stop and nothing bad will happen. You can refuse to help me even if your parents have said that you can.

All of the answers that you give me will be kept in a locked cabinet in a room at Georgia Southern University, and only I or people helping me will see your answers. Don't write your name anywhere on either surveys.

If you or your parent(s)/guardian(s) have any questions about this form or the project, please call me at (912) 678-1717. Thank you!

If you understand the information above and want to help in the project, please sign your name on the line below:

Yes, I want to help in the project: _____

Child's Name: _____

Investigator's Signature: _____

Date: _____

APPENDIX K
FLYER FOR STUDY

WIN A GIFT CERTIFICATE FOR FENCING.NET!

If you are an epee fencer competing in Division I, I-A, II, or III, just fill out some surveys and you are automatically entered in the raffle. Prizes are $50, $25 and $10!!!

Stop by the booth near the registration table. Questionnaires MUST be filled out *before your event starts on the day that you are competing*. This is for a research study by Elizabeth Athanas.

APPENDIX L

BIOGRAPHICAL SUMMARY

Elizabeth Athanas was raised in Poughkeepsie, New York. As the youngest of three girls, she was constantly competing with her older sister. In high school, she played the oboe and flute in band, was the secretary for the National Honor Society, and earned her Gold Award as Girl Scout. After graduating from Dutchess Community College with an Associates Degree in Liberal Arts Honors, she transferred to the University of North Carolina at Chapel Hill as a junior. She majored in Sociology and enjoyed traveling the world and scuba diving. As captain of the NCAA Division I women's epee squad for two years, she trained with the head varsity fencing coach legend Ronald Miller, PhD. In 2001, she participated in the NCAA Championships and came in 13th out of 23 competitors. That same year, Elizabeth was ranked 41st in the nation for senior women's epee. In 2003, she suffered a second ACL injury while fencing sabre and it sidelined her fencing progress that year. After an eight month recovery, she placed fifth at the 2004 North American Cup in Atlanta, Georgia in Division II women's epee. The following year she took Bronze in the same event, earning her "B" rating.

Through her experience as an athlete and taking her mother's advice, Elizabeth discovered the field of sport psychology. Her consulting interests include recovery from injury, peak performance enhancement, healthy behavior and exercise adherence, and precompetitive anxiety. Currently, she is an avid skydiver who has almost 300 jumps. She has jumped out of nine different types of aircraft and has jumped at eleven different drop zones. She is striving to break 1000 jumps, become a free flyer, train on a part of a four-way relative work team, learn to drive a motorcycle, and gain experience in wing

suit flight. After graduation, she is going to work for Fencing.net and become a sport psychology consultant for fencers in the Atlanta area.