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OVERCOMING "THE WALL": A COGNITIVE-MOTIVATIONAL-RELATIONAL EXAMINATION OF THE ANTECEDENTS OF SELF-CONFIDENCE AMONG ENDURANCE PERFORMERS

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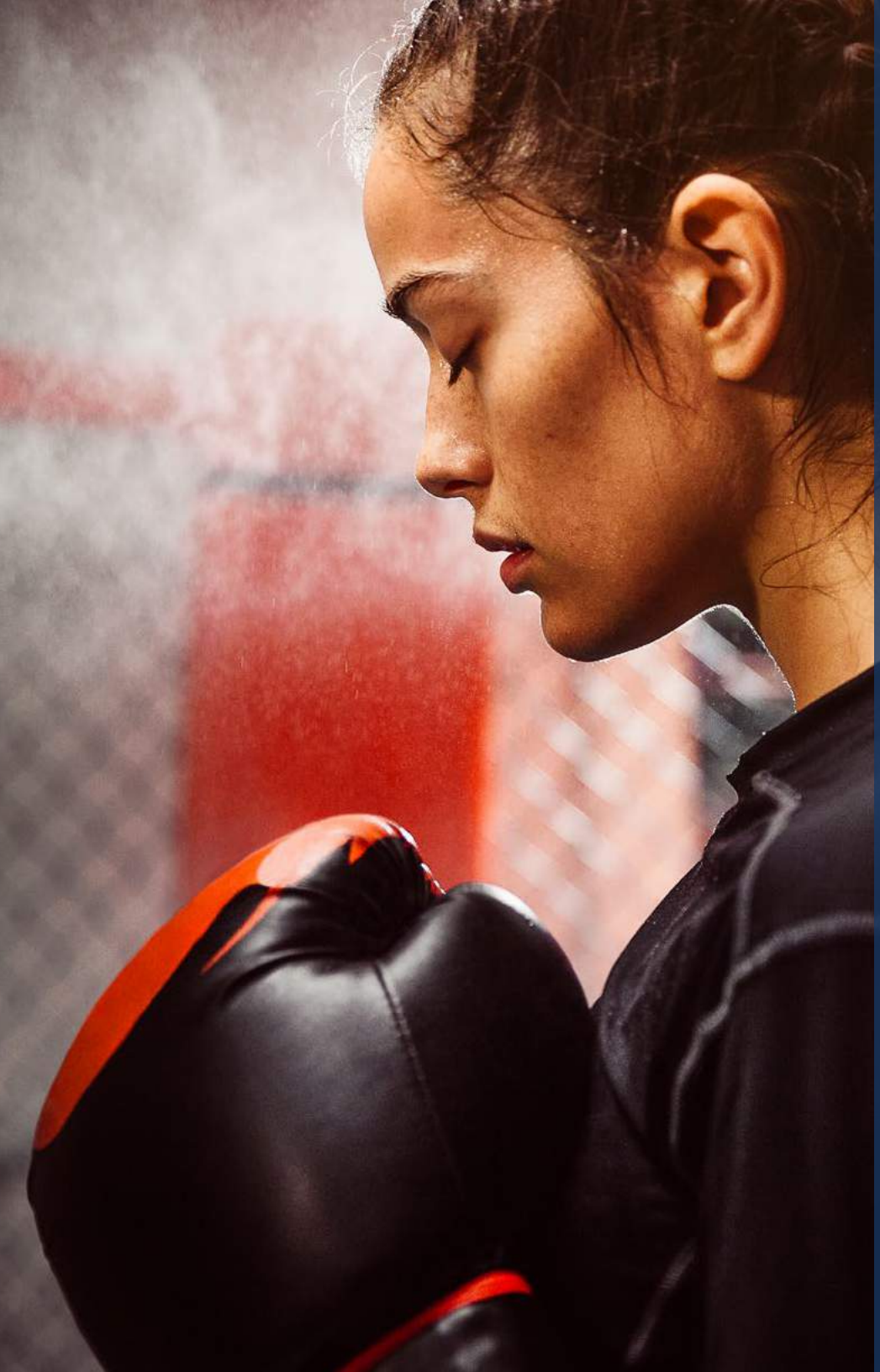
ABSTRACT

This exploratory investigation examined the value of using Lazarus' cognitive-motivational-relational model to identify the process-oriented antecedents of self-confidence for endurance athletes. This study also assessed whether groups of endurance athletes clustered based on stress antecedents differed according to theoretical predictions on CSAI-2 subscale scores. Participants were 184 triathletes, 69 distance runners, and 65 cyclists who completed questionnaires testing Lazarus' model 1-2 days prior to competition and the CSAI-2 approximately one hour before competing. Cluster analyses revealed three distinct stress profiles that resulted in high, moderate and minimal stress groups whose CSAI-2 subscale scores corresponded to theoretical predictions.

Keywords: self-confidence, endurance athletes, cognitive-motivational-relational model



OVERCOMING "THE WALL ": A COGNITIVE-MOTIVATIONAL RELATIONAL EXAMINATION OF THE ANTECEDENTS OF SELF-CONFIDENCE AMONG ENDURANCE PERFORMERS

Self-confidence, or the belief that someone can achieve a certain outcome (Feltz, 2007), has been shown to be one of the most important factors impacting performance among elite athletes. Gould and his colleagues (Gould, Guinan, Greenleaf, Medbery, & Peterson, 1999) conducted interviews with athletes at the Atlanta and Nagano Olympic Games and demonstrated that self-confidence was the variable that best discriminated between most and least successful Olympians. Moreover, Smith and Christensen (1995) identified self-confidence as the strongest predictor of baseball batting and pitching performance. Many other studies have found strong relationships between confidence and performance for a variety of other sports including: wrestling (Gould & Weiss, 1981), rifle shooting (Doyle, Landers, & Feltz, 1980) and swimming (Jones, Hanton, & Swain, 1994). The mechanisms which underpin these findings are related to a variety of positive attributes and outcomes including: more effective goal orientations, (Hall & Kerr, 1997), success of Olympic athletes (Gould, Dieffenbach, & Moffett, 2002), enhanced performance (Moritz, Feltz, Fahrbach, & Mack, 2000), with perhaps the most important mechanism being reductions in cognitive and somatic anxiety (e.g., Cresswell & Hodge, 2004; Vealey, Hayashi, Garner-Holman, & Giacobbi, 1998). Woodman and Hardy (2003) conducted a meta-analysis and reported that 32 of 43 studies that met inclusion criteria found a positive relationship between self-confidence and performance. In the same review, the researchers concluded that self-confidence was related to performance more strongly than cognitive anxiety (Woodman & Hardy, 2003).

While the positive impact of self-confidence has been well documented, Vealey and her colleagues (Machida, Otten, Magyar, Vealey, & Ward, 2017; Vealey, 2001) called for the identification of models to help researchers better understand the antecedents of self-confidence in sport. Woodman and Hardy (2003) concluded in their review of literature that cognitive anxiety and self-confidence do not impact performance independently as hypothesized so in order to assist athletes better it is important to understand as many of the antecedents to self-confidence as possible. The Cognitive-Motivational-Relational (CMR) model by Lazarus' (1991, 1999, 2000) was one such model that illustrated understanding the antecedents of affect-related appraisal emotions important for sport performance (Hammermeister & Burton, 2001).

LAZARUS' COGNITIVE-MOTIVATIONAL-RELATIONAL MODEL

Lazarus (1991, 1999, 2000) conceptualized anxiety as an emotional response to stress, and defined stress as a complex cognitive

evaluation that includes three principal components: primary appraisal, secondary appraisal and coping resources. Primary appraisal is defined as the process of assessing the impact of the competitive situation on one's physical and psychological well-being. Lazarus' model specified that primary appraisal can be both positive (i.e., benefit and challenge) and negative (i.e., threat and harm/loss). The underlying belief that individuals benefit from overcoming stressful experiences was determined to be a challenge appraisal (Lazarus & Folkman, 1984), and performers exuded a confident mind-set based on their belief that they have the skills to analyze and handle the situation (Anshel, 2001).

While challenge appraisals were likely related to pleasurable emotions such as eagerness, excitement, exhilaration, and confidence, threat appraisals could also be a reflection of athletes' lack of confidence (Anshel, 2001). Thus, for this investigation into the antecedents of self-confidence, primary appraisal was operationalized as threat. Secondary appraisal, which normally occurs temporally following primary appraisal, is the cognitive evaluation concerned with what the individual can do to handle the appraised threat. Blame/credit, future expectancies, and perceived coping potential are the major components of secondary appraisal. The construct of control, particularly being able to reduce or eliminate primary sources of threat, is highly related to all three components of secondary appraisal. Consequently, the secondary appraisal component that most directly impacts self-confidence appeared to be control (Lazarus, 1999), prompting secondary appraisal to be operationalized as perceived control in this study.

Lazarus and Folkman (1984) defined coping as "a constantly changing cognitive and behavioral effort to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (p. 141). Lazarus and Folkman made an important distinction between problem-focused and emotion-focused coping. Problem-focused coping (PFC) referred to cognitive and behavioral efforts used to minimize distress by reducing or eliminating the source of threat, whereas emotion-focused coping (EFC) involved strategies used to regulate emotional arousal and distress, even if the source of threat remains unchanged. Lazarus (1999) emphasized that individuals need to have both requisite coping skills and the ability to use them when needed. Moreover, he suggested that PFC and EFC strategies should both be used in most stressful situations, although PFC strategies should be most salient in high control situations to reduce the sources of threat and EFC strategies used most prominently in low control situations.

RESEARCH TESTING LAZARUS' MODEL

While Lazarus' CMR model has been evaluated in sport research, most studies have tested only the coping portion of the model (e.g., Anshel & Weinberg, 1999; Anshel & Wells,

2000), with few sport studies having attempted to test the entire model. In 2004, Hanton, Mellalieu, and Hall conducted a qualitative study to help understand the effects of "pre-completive anxiety intensity" on ten elite performers. The researchers wanted to understand how competitive anxiety impacted outcome and learn how each performer managed it. Qualitative results yielded that negative thoughts prior to competition was often connected to low confidence by the participants. These identified negative thoughts could be categorized as primary or secondary appraisal in the CMR Model (Hanton et al., 2004; Lazarus & Folkman, 1984; Lazarus, 1999). The researchers found than when anxiety is perceived as especially problematic, the elite performers engaged in emotion-focused coping (e.g., mental rehearsal, thought stopping, and positive self-talk; Hanton et al., 2004).

Qualitative inquiries have been used to understand both the similarities and differences in stressors experienced by most, if not all, athletes (Neil, Hanton, Mellalieu & Fletcher, 2011; McKay, Niven, Lavallee, & White, 2008). Neil, Hanton, Mellalieu, and Fletcher (2011) then revisited the concepts of appraisal and emotional reactions in interviews with twelve athletes (six elite, six non-elite) and actively conceptualized their questions using the CMR model. Despite similarities, there is evidence that the differences are very important to understand as individuals can and will interpret the same event, or stressor, differently based on their history and experiences (Neil, Hanton, Mellalieu & Fletcher, 2011; McKay, Niven, Lavallee, & White, 2008).

After a review of the literature, it appears few quantitative studies have been conducted in sport settings and few with non-elite performers to understand the antecedents of self-confidence. Hammermeister and Burton (2001) utilized the Lazarus model to assess the antecedents of competitive anxiety in endurance athletes. Results revealed that all three components of Lazarus' stress model predicted both cognitive and somatic state anxiety better than did individual model components. In 2017, Doron and Martinent found positive relationships between challenge appraisal, task-oriented coping, positive emotions and performance in elite fencers using the Lazarus' model. In addition, they found that "disengagement-oriented coping mediated the relationship between threat and performance whereas task-oriented coping and positive emotions partially mediated the relationship between challenge and performance" (Doron & Martinent, 2017, p 1015). They concluded with support to Lazurus' (1999) claim that the psychological constructs exist in a conceptual unit but did not look specifically at self-confidence as part of their study.

In summary of the above-discussed literature, we know self-confidence affects performance, that cognitive anxiety impacts performance, but we still do not understand specifically what role antecdents of cogntive anxiety play in self-confidence, therefore the purpose of this investigation was to employ Lazarus' model to assess the role that perceived threat, control, and coping resources played in understanding the antecedents of self-confidence in endurance athletes, regardless

of elite or non-elite status. Specifically, we examined the hypotheses that CMR antecedent groups do indeed exist in sport populations and that these groups would differ on self-confidence levels.

METHOD

PARTICIPANTS

Data for this study was collected as part of a more comprehensive investigation that examined stress, anxiety and self-confidence responses of endurance athletes from three sports, including: triathlon, distance running, and cycling. The triathlon subsample was obtained from two large races held in the Pacific Northwest, with 114 performers competing in an Ironman-length (i.e., 2.4-mile swim, 112-mile cycle and 26.2-mile run) triathlon and 70 athletes participating in a regional half-Ironman-length (i.e., 1.2-mile swim, 56-mile cycle and 13.1-mile run) triathlon. The triathlon sample was comprised of five times as many males as females (i.e., 153 males and 31 females), who ranged in age from 20 to 66 years (i.e., age M = 35.1 years; SD = 8.59 years). The sample also varied on ability from professional athletes (i.e., top 10 finishers) to middle of the pack age-group competitors.

Distance runners included 69 performers who competed in either a large Northwest marathon (i.e., 26.2 miles) or half-marathon (i.e., 13.1 miles) race. The distance runners comprising this subsample included 49 males and 20 females, with a mean age of 38.1 years (SD = 8.86 years), and their ability levels ranged from elite top 10 finishers to age group participants.

Finally, the cycling subsample included 65 cyclists who participated in one of three separate USCF-sanctioned races in the Pacific Northwest at distances ranging from 25 to 66 miles. Cyclists included 60 males and 5 females, with ages ranging from 13 to 49 years (i.e., age M = 28.2 years; SD = 8.68 years). Ability levels also varied widely from elite Category 1 cyclists to entry-level Category 5 racers.

INSTRUMENTATION

Four instruments were employed in this investigation to assess the antecedents of self-confidence, differentiate between self-confidence levels of performers with different stress profiles, and investigate the conceptual reciprocity of self-confidence and anxiety.

Endurance Sport Coping Questionnaire (ESCQ). The Endurance Sport Coping Questionnaire (ESCQ) was a sport-specific modification of Carver, Scheier and Weintraub's (1989) COPE Inventory. The ESCQ was developed to assess coping strategies that individuals used to deal with potentially stressful situations in endurance events such as Ironman triathlons. The COPE or selected COPE subscales have been used extensively to assess coping in sport settings, and available psychometric research has confirmed acceptable preliminary reliability and validity for the COPE in the physical activity and sport domain (e.g., Crocker & Graham, 1995; Crocker & Isaak, 1997).

The ESCQ selected those COPE subscales most appropriate for this investigation. Each item was then rewritten to ensure that they were applicable to an endurance population while retaining as much of the conceptual intent as possible. Two new subscales (i.e., confidence development and association/dissociation) were added for this study to assess additional coping strategies that were believed important to help endurance athletes cope with competitive stress. Because Carver et al. (1989) have demonstrated solid psychometric properties for the COPE, it was assumed that minor rewording of items for the ESCQ would have minimal impact on the documented reliability and validity for the 10 subscales that these two instruments have in common.

Perceived Threat to Competitive Endurance Goals Inventory (PTCEGI). Hammermeister and Burton (2001) developed the Perceived Threat to Competitive Endurance Goals Inventory (PTCEGI) to assess the perceived threat component of Lazarus' stress model, particularly how threatening various personal and situational factors are perceived to be to the attainment of endurance athletes' competitive goals. The scale had 13-items and the factor analysis revealed that there were three major types of threat (i.e., environmental threat, race performance, race strategy). Preliminary psychometric properties for the PTCEGI yielded Alpha coefficients that ranged from .61 to .68 with a mean of .64 for the aforementioned subscales (Hammermeister & Burton, 2001).

Perceived Controllability of Competitive Endurance Goal Threats Inventory (PCCEGTI). Hammermeister and Burton (2001) developed the Perceived Controllability of Competitive Endurance Goal Threats Inventory (PCCEGTI) to have parallel content to the PTCEGI, using the same 13 items with a stem that focused on the controllability of goal threats. Each of the 13 items (e.g., "losing your race focus or running someone else's race") was rated on the same 7-point Likert scale used for the PTCEGI. Preliminary psychometric properties for the PCCGETI were acceptable for high and low control, but moderate control was dropped from further analyses due to a low alpha internal consistency coefficient.

Competitive State Anxiety Inventory – 2 (CSAI-2). The Competitive State Anxiety Inventory -2 (CSAI-2) was developed by Martens et al. (1990) to assess cognitive and somatic state anxiety and state self-confidence in competitive situations. Extensive research (Martens et al., 1990) confirms strong psychometric properties for each of the CSAI-2's three 9-item subscales (i.e., cognitive anxiety, somatic anxiety and self-confidence). Items are rated on a 4-point Likert scale ranging from 1 (not at all) to 4 (very much so), yielding subscale scores that range from 9 to 36.

PROCEDURE

Prior to contacting race directors, approval was granted by the university's institutional review board for the protection of human subjects. Given the sample drew from three distinct endurance sports, several strategies were necessary to secure participation and collect baseline. The primary investigator set up a booth at each of the race expositions where participants were solicited for the study. Competitors who agreed to participate in the study signed informed consent statements and then completed the ESCQ, PTCEGI, PCCEGTI and EADBQ, a process that took approximately 20 minutes. One of the cycling competitions had mandatory check-in the day prior to the race. Cyclists who agreed to participate in the study completed baseline questionnaires that were administered by the race director. For the two cycling events that did not require check-in the day before the race, baseline data was collected as long before the race as possible on race morning.

Precompetitive self-confidence data was collected in several ways. Half-Ironman triathlon participants completed the CSAI-2 (Martens et al., 1990) while on the bus from race headquarters to the race start. Performers in the other races were given a copy of the CSAI-2 when they completed baseline testing with instructions to complete the form as close as possible to the race start, but definitely within two hours of race time. Study participants then returned completed CSAI-2 questionnaires at designated drop-off sites near the race start. For any competitor who forgot to bring their CSAI-2 forms to the race,

additional forms were available for completion at the drop-off sites on race morning. Racers reported completing the CSAI-2 from 2.1 hours to 30 minutes prior to the start of their race, with a mean completion time of 55 minutes prior to race start. Overall, 71% of all endurance athletes who completed baseline questionnaires also completed the CSAI-2 on race morning.

RESULTS

Cluster analysis was employed to assess the existence of differential stress antecedent profiles by separating the overall sample into homogeneous subgroups that maximize between-group variance while minimizing within-group variance. A nonhierarchical k-means clustering procedure (SPSS Quick Cluster, 2005) was used, with squared Euclidean distance serving as a similarity measure. Prior to clustering, all variables were standardized by converting them to z-scores to allow for easier interpretation of results.

Cluster analysis results revealed three distinct groups of endurance athletes based on their stress profiles (see Table 1). Cluster 1 (i.e., high stress cluster; n = 117) perceived high threat and low control and used predominantly emotion- rather than problem-focused coping strategies. Cluster 2 (i.e., moderate stress cluster; n = 82) perceived both moderate threat and control and reported using a mix of problem- and emotion-focused coping strategies. Finally, Cluster 3 (i.e., minimal stress cluster; n = 75) perceived low threat and high control, so they seemingly had little reason to using coping strategies.

MANOVA analyses comparing the three stress clusters across CSAI-2 subscale scores demonstrated significant cluster differences, Wilks' lambda $F(6, 538) = 4.56$; $p < .0001$. Follow-up univariate analysis of variance results revealed cluster differences on self-confidence, $F(2, 271) = 12.0$; $p < .0001$, cognitive anxiety, $F(2, 271) = 5.19$; $p < .005$, and somatic anxiety, $F(2, 271) = 4.61$; $p < .01$. Tukey's HSD post hoc comparisons for self-confidence revealed that Cluster 1 was significantly different from Clusters 2 and 3, who did not differ from each other. The high stress cluster was significantly less confident than the moderate or minimal stress clusters.

Post hoc comparison for cognitive anxiety revealed that Cluster 1 was significantly different from Clusters 2 and 3, and Clusters 2 and 3 were also significantly different from each other. The high stress cluster reported significantly higher cognitive anxiety than did the moderate stress cluster,

who perceived greater cognitive anxiety than did the minimal stress cluster. Finally, post hoc comparison of somatic anxiety scores revealed that Cluster 1 was significantly different than Clusters 2 and 3, who differed significantly from each other. The high stress cluster reported significantly higher somatic anxiety than did their minimal stress counterparts, who experienced less somatic anxiety than did moderate stress competitors.

CANONICAL ANALYSIS OF STRESS ANTECEDENT VARIABLES VERSUS CSAI-2 SUBSCALES

Lazarus' stress model emphasized that stress can be appraised both positively and negatively, and Martens and his colleagues (1990) have provided preliminary evidence of a reciprocal relationship between self-confidence and cognitive, and to a lesser degree, somatic anxiety. Therefore, a canonical correlational analysis was performed to simultaneously look at multivariate relationships between the stress antecedents and the appraisal emotions of state self-confidence and anxiety. The canonical analysis correlated the set of stress antecedent variables that included 18 threat, control and coping subscales with a second set of variables comprised of the three CSAI-2 subscales. Means and standard deviations for each subscale are displayed in Table 1.

With all three canonical function pairs included, $X2 (54) = 183.59$; $p < .001$. With the first canonical correlation removed, both subsequent X2 tests were statistically significant (all p-values < .05). However, because of interpretability issues, only the first canonical correlation was interpreted in this study. The first canonical correlation, $R = .62$, indicated 38% of variance overlapped between the two variable sets. Results for the first pair of canonical functions appear in Table 2. The table displays raw canonical coefficients, standardized canonical coefficients and correlations between the variables and their respective canonical variates (i.e., canonical loadings). The within-set variance accounted for by each canonical variate was 60% for the CSAI-2 variables and 11% for the threat, control and coping subscales. The other set variance (i.e., redundancy) accounted for by each canonical variate was 23% for the CSAI-2 subscales and 4% for the stress antecedent variables.

Based on a cut-off correlation of .30 (Tabachnick & Fidell, 2001), the variables in the stress antecedent set that were correlated with the first canonical variate were the three threat variables, the two control subscales, and four coping variables (i.e., positive reinterpretation, venting emotion, emotional social support, an association; see Table 2). Among the CSAI-2 subscales, self-confidence, cognitive anxiety, and somatic anxiety correlated with the second canonical variate (see Table 2). Interpretation of the canonical loadings suggests that endurance athletes who reported high self-confidence and low anxiety also acknowledged low threat, high control

and a congruent pattern of coping. These endurance athletes used more positive reinterpretation and association and less emotional social support and venting emotions, providing additional support for the reciprocal nature of self-confidence and anxiety as well as their antecedents.

DISCUSSION

Cluster analysis results confirm the value of Lazarus' model as a process-oriented conceptual framework for examining the antecedents of self-confidence. First, cluster data revealed three distinct clusters that seem to represent high, moderate and minimal stress endurance athletes. Cluster 2, the minimal stress group, revealed significantly higher confidence scores and lower cognitive anxiety scores than did Cluster 3 (i.e., moderate stress cluster), who had significantly higher self-confidence and lower cognitive anxiety than did Cluster 1 (high stress cluster). Somatic anxiety profiles generally matched the findings for the other two CSAI-2 subscales, with minor variations. These data also confirm the reciprocal nature of self-confidence and cognitive anxiety identified by Martens and his colleagues (1990).

Fewer differences in PFC strategy use were expected across clusters because threat, control, and coping data were collected one to two days prior to the event, and problem-focused coping should not be employed to any significant degree until the race commences. Cluster analysis results provide theoretical support for the overall Lazarus' model by showing threat, control, and coping scores that are consistent with self-confidence predictions. Clear differences in coping strategies employed were evident between Clusters 2 and 3 that confirmed their differential profiles. Moderate stress Cluster 2 employed positive reinterpretation-EFC, informational social support-EFC, planning-PFC, confidence development-PFC, active coping-PFC significantly more than did Cluster 3, the minimal stress group. Because of their low threat and high control profile, Cluster 3 had little reason to cope and thus used significantly lower levels of both problem- and emotion-focused coping, including: positive reinterpretation-EFC, informational social support-PFC, humor-EFC, venting emotions-EFC, dissociation-EFC, emotional social support-EFC, suppression of competing activities-PFC, and active coping-PFC. High stress Cluster 1 perceived high threat and low control and thus chose to use more emotion-focused (e.g., humor, venting emotions, dissociation, and emotional social support) and less problem-focused (e.g., planning, confidence development, association, and active coping) coping.

The results of this exploratory study have provided solid support for the Lazarus' cognitive-motivational-relational model as a conceptual framework for investigating the antecedents of self-confidence as a closely-linked appraisal emotion. However, the transactional model would be

strengthened if better ways could be found to examine interactions between model components (i.e., two-way relationships between threat and control, threat and coping, and control and coping, as well as the three-way relationship among threat, control and coping). The transactional model hypothesizes that all three model components influence one another, therefore techniques are needed that can more accurately account for these interrelationships.

RECIPROCAL NATURE OF SELF-CONFIDENCE AND ANXIETY

Canonical correlational analysis used to assess the multivariate relationship between stress antecedents and CSAI-2 subscales confirmed the findings of Martens and his colleagues (1990) concerning the reciprocal nature of self-confidence and anxiety, particularly cognitive anxiety. Endurance athletes who displayed high self-confidence and low anxiety also reported low threat, high control, and greater use of positive reinterpretation, and association (i.e., reading their bodies) and less extensive use of emotional social support and venting emotions. These findings are consistent with Martens et al.'s (1990) results and provide further support for the reciprocal nature of the relationship between self-confidence and anxiety. In fact, we believe that these data support the recommendation that self-confidence and anxiety researchers may want to look at these two constructs in a more comprehensive way in which they are seen as primary appraisal emotions within a stress conceptual framework.

Although much work can still be done in studying the antecedents of self-confidence, Lazarus' model has shown promise as a conceptual framework on which to base continued future research. Results of this study show that the Lazarus model may be a useful tool for examining the process of developing and maintaining self-confidence on a moment-to-moment basis, providing a more detailed view of the complex cognitive evaluation process that promotes self-confidence. The Lazarus model attempts to illuminate how situational factors are interpreted "in the moment" that may prompt changes in self-confidence. Any attempt to understand the importance of the antecedents of self-confidence must investigate the specific situational factors that may threaten/promote confidence and the coping resources available to overcome these threats and boost confidence.

LIMITATIONS

Some limitations of the current study include no discussion on impact of gender-identity or cultural background of the athlete. Both of these demographic points have ties to perceived control and self-confidence. The impact of self-confidence of an elite, or professional athlete, versus that of an amateur, or age-group athlete, is important to denote. Future studies would do well to include these variables in order understand and to guide a particular athlete to success. A final limitation is that results cannot be generalized to any other sports other than those represented by

the endurance athletes that were sampled(i.e., long course triathletes, ultramarathoners, cyclists) due to the cross-sectional nature of the study.

IMPLICATIONS FOR FUTURE RESEARCH AND APPLICATION

Future research needs to be conducted to more precisely explore the role that appraisal and coping play in the development of self-confidence. For example, primary appraisal was operationalized as threat for this investigation. Future researchers may also want to explore the nature of more positive primary appraisals in order to determine whether negative appraisal indeed is more important to confidence levels than positive ones. New instruments which can validly measure challenge, as well as benefit, may also provide more insight into the most powerful process antecedents of confidence.

Control is a component of secondary appraisal that conceptually should be highly related to self-confidence. In this study, control turned out to be a relatively poor predictor of confidence, and future researchers may be able to shed more light on this hypothesized relationship by coming up with instruments which measure more directly the secondary appraisal concepts of blame/credit, perceived coping potential, and future expectancies.

Furthermore, these results raise some interesting directionality questions. Do high levels of threat and low perceptions of control and coping resources reduce athletes' confidence? Conversely, is being low in self-confidence a cause of higher threat perceptions and lower feelings of control and coping? Could it be that that highly threatened athletes who feel they cannot cope with environmental demands suffer from low trait sport-confidence that prompts reduced state self-confidence scores? While our findings indicate a strong relationship between self-confidence and components of the Lazarus' model, readers should be careful not to assume a causal relationship between these two factors. The cross-sectional design of this study does not allow for direct assessment of causality, and additional research is needed to further elucidate and delineate the nature, direction, and meaning of these relationships.

From a practical standpoint, several implications seem evident from this study. First, this

research suggests that sport psychologists and practitioners need to develop intervention programs for diffident athletes that incorporate techniques designed to not only reduce perceived threat, but to also increase perceptions of control and perceived coping resources as well. Second, the results of this study suggest that even in similar competitive situations performers may experience differential levels of confidence due to totally different threat, control and coping profiles. Consultants need to effectively identify the most threatening issues for each athlete, and then make decisions on appropriate confidence management strategies to employ based on those threats.

Third, control issues appear to have varying levels of impact on confidence levels. However, the fact that diffident athletes report low perceptions of control over various competitive threats should not be ignored. Diffident athletes should be taught appropriate confidence development tools that help enhance control perceptions. Fourth, results of this study indicate that the most effective coping resources will be ones which are most compatible with and effective for the athletes' threat and control profiles. For example, the Lazarus' model has shown that athletes may experience low confidence levels while experiencing moderate levels of threat, provided that perceptions of control and coping resources are even lower. Therefore, interventions designed specifically to deal with threat would be ineffective in situations where threat is not the primary antecedent of low self-confidence, or intervention strategies that do not inlcude teach coping strategies that target the types of threat athletes perceive.

Finally, practitioners should recognize that self-confidence development may vary widely in any given population. Cluster analysis results in this study show that endurance athletes may develop self-confidence for a variety of reasons. This finding lends support for the need to treat each athlete individually, and to avoid "cookbook" approaches that may attempt to treat all athletes in a similar way. Athletes should be understood in a holistic way in order to understand what might be getting in their way of confidently competing.

CONCLUSION

Although much work can still be done in studying the antecedents of self-confidence, Lazarus' model showed promise as a conceptual framework on which to base continued future research. Results of this study reveal that the Lazarus model may be a useful tool for examining the process of developing and maintaining self-confidence on a moment-to-moment basis, providing a more detailed view of the complex cognitive evaluation process that promotes self-confidence. The Lazarus model attempts to illuminate how situational factors are interpreted "in the moment" that may prompt changes in self-confidence. Any attempt to understand the importance of the antecedents of self-confidence must investigate the specific situational factors that may threaten/promote confidence and the coping resources available to overcome these threats and boost confidence.

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Table 1: Descriptive Results for Antecedent Variables Used to Create Three Threat Clusters Plus CSAI-2 Subscales.

	Overall Sample		High Threat Cluster 1		Moderate Threat Cluster 2		Minimal Threat Cluster 3	
	(n = 274)		(n = 117)		(n = 82)		(n = 75)	
Subscales	**M**	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
CSAI-2								
Self-Confidence	23.52	5.11	21.72	4.45	24.53	4.98	25.20	5.38
Cognitive Anxiety	16.39	4.30	17.18	4.49	16.45	4.00	15.06	4.06
Somatic Anxiety	17.10	4.86	18.04	5.25	16.97	4.02	15.77	4.76
Threat								
Environmental Stress	3.44	1.27	4.03	1.09	3.31	1.09	2.64	1.11
Race Strategy	3.09	0.97	3.58	0.83	2.97	0.86	2.46	0.88
Race Performance	3.31	1.15	3.96	0.97	2.98	1.00	2.63	1.01
Control								
Low Control	3.28	1.61	2.83	1.35	3.61	1.65	3.63	1.79
High Control	5.31	1.05	4.84	1.05	5.67	0.87	5.65	0.93
Coping								
Religion	1.73	0.92	1.82	0.92	1.83	1.03	1.46	0.73
Positive Reinterpretation	3.22	0.70	3.19	0.60	3.62	0.42	2.83	0.84
Humor	2.34	0.83	2.49	0.73	2.63	0.82	1.77	0.72
Emotional Social Support	2.14	0.77	2.32	0.71	2.41	0.71	1.54	0.60
Dissociation	2.60	0.77	2.75	0.66	2.74	0.78	2.22	0.78
Venting Emotions	1.85	0.66	2.11	0.65	1.92	0.60	1.35	0.40
Instrumental Social Support	2.30	0.80	2.38	0.72	2.69	0.82	1.74	0.59
Planning	2.77	0.55	2.56	0.42	3.25	0.37	2.58	0.58
Active Coping	2.25	0.57	2.10	0.47	2.75	0.43	1.94	0.51
Suppression	2.62	0.70	2.60	0.67	2.62	0.70	2.29	0.72
Association	3.27	0.66	3.06	0.67	3.55	0.52	3.27	0.69

Table 2: Canonical Correlational Analysis, Coefficients and Loadings.

Subscale	Canonical Coefficient	Standardized Canonical Coefficient	Canonical Loading
CSAI-2			
Self-Confidence	.13	.67	.90
Cognitive Anxiety	-.13	-.55	-.83
Somatic Anxiety	.03	.13	-.54
Stress Antecedents			
Environmental Threat	.11	.14	-.30
Race Strategy Threat	-.54	-.53	-.64
Race Performance Threat	-.15	-.17	-.46
High Control	.04	.04	.37
Low Control	.17	.27	.42
Religion	.08	.07	-.01
Positive Reinterpretation	.54	.38	.34
Instrumental Social Support	.16	.12	-.14
Planning	-.09	-.05	.06
Humor	-.37	-.31	-.23
Venting Emotion	-.004	-.002	-.30
Confidence Development	.28	.21	.25
Dissociation	.11	.09	.02
Emotional Social Support	-.43	-.32	-.36
Association	.26	.17	.48
Suppress Competing Activities	-.11	-.08	-.10
Active Coping	-.40	-.23	-.16

FROM COVER

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Author Note
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