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Modeling the Relationship Between Self-Consciousness and Competition Anxiety

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Abstract

The present study examined the relationship between self-reported levels of self-consciousness and competition anxiety among a sample of sportspeople ($N = 519$). We hypothesized that self-consciousness would exhibit a positive linear relationship with competition anxiety via the mediator of social anxiety and that this relationship would be moderated by gender. Path analysis using robust maximum likelihood estimator techniques in EQS were employed to examine model fit. Examination of fit indexes demonstrated that the fit of the baseline a priori model was good (Robust CFI = .98, SRMR = .06). Multigroup analyses assessing invariance across gender were conducted by imposing increasingly strict equality constraints. The models displayed good fit (CFI = .96, SRMR = .08); however, inspection of the Lagrange multiplier test and then single sample models revealed the path between social anxiety and somatic anxiety was stronger for females. We concluded that the relationship between self-consciousness and competition anxiety is mediated by the experience of social anxiety; however, the present findings refute the hypothesis that the relationship is moderated by gender.

Modeling the Relationship Between Self-Consciousness and Competition Anxiety

The hotbed of the competitive sports arena can be a stressful place. Athletes often focus on themselves, their behaviors, and the way in which they convey themselves to others (Wilson & Eklund, 1998). Self-attention can create internal sources of distraction and may influence cognition by reinforcing task-irrelevant processing (Moran, 1996). When individuals focus on the self, they sometimes become excessively pre-occupied with internally generated fears, worries, and expectations, which collectively, can be viewed as the characteristics of an anxious individual. Further, it has been postulated that anxiety is a reaction to the process of self-focused attention (Fenigstein, Scheier, & Buss, 1975; Gibbons, 1990) and that this process can often have a negative impact on performance (Moran, 1996). Conversely, effective management of self-focus, wherein a balance is struck between focusing on the self, the environment, and the task at hand can result in an appropriate mental focus. This facilitates positive cognitions and improves flow and performance (Loehr, 1986).

Self-consciousness is defined as the tendency to either direct attention inwards focusing on covert aspects of self that are associated with one's inner thoughts and feelings, or outwards, focusing on aspects of self that are on public display and reflect elements that are most relevant to motives involving self-presentation or self-portrayal (Scheier & Carver, 1985). These self-focusing tendencies are referred to as private and public self-consciousness respectively. A third facet of self-consciousness is social anxiety, representing an individual's reaction to being focused on by others. Contemporary perspectives on social anxiety highlight the view that both the motive to make a particular impression and the expectation of failing to do so are key elements in its production (Schlenker & Leary, 1982). Therefore, it can be suggested that, to some degree, self-consciousness is an antecedent of the experience of social anxiety (Schlenker & Leary, 1982).

Athletes can distract themselves (self-focus), and consequently worry (a cognitive component of anxiety), experience regrets, and engage in speculation (Lewis & Linder, 1997).

Further, Martin and Debus (1999) stated that when attention is directed towards the self, individuals are more likely to experience negative affect and make negative judgments about the self and the environment. These negative perceptions can demotivate individuals causing decreases in the amount of effort devoted to an activity (Leary, 1992). Additionally, Jackson (1995) demonstrated that a 'loss of self-consciousness' increases the intensity of the flow experience. However, when the self becomes salient "flow is disrupted and positive affect diminishes" (Silvia, 2002, p. 196). Terms such as "choking" (e.g., Baumeister, 1984), and "icing" (e.g., Kozar, Whitfield, Lord, & Mechikoff, 1993) have been used interchangeably to represent situations in which performance has been impaired by worries and fears associated with the possibility of imminent failure or defeat.

The dispositional constructs of self-consciousness and competition anxiety have both been found to have an impact upon cognitions associated with performance. Competition anxiety has been defined as "an individual's tendency to perceive competitive situations as threatening and respond to these situations with state anxiety" (Martens, Vealey, & Burton, 1990, p. 11) and will be used henceforth to represent trait anxiety unless otherwise stated. Research has revealed consistently that individuals who score highly on trait anxiety measures experience more state anxiety, particularly in highly competitive, evaluative situations when compared to those with low trait anxiety (e.g., Donzelli, Dugoni, & Johnson, 1990; Gould, Horn, & Spreeman, 1983; Martens et al., 1990). For these reasons, it is important to study competition anxiety and the implications it has for the quality of the sport experience and its product (i.e., performance).

Wilson and Eklund (1998) observed that "the tendency to experience competitive anxiety, particularly cognitive anxiety in the form of worries, is closely associated with the tendency to perceive self-presentational threat during sport competition" (p. 93). Self-presentational concerns were found to be strongly associated with cognitive rather than somatic anxiety, and that substantial proportions of variance in competition anxiety could be accounted for by self-presentational concern variables. Likewise, Gibbons (1990) and Wilson and Eklund (1998) noted

that the experience of anxiety is heightened by attention to the self. Further, research has identified that individuals experiencing high competition anxiety worry more about factors relating to negative social evaluation when compared to individuals experiencing low competition anxiety (Dunn & Causgrove-Dunn, 2001; Gould et al., 1983; Passer, 1983). These studies primarily represent significant relationships with aspects of public self-consciousness (i.e., attention to self, fear of negative evaluation) thus, the current research will extend the knowledge base by exploring the role of private self-consciousness in the formation of competition anxiety.

Previous research within clinical and academic settings has made advances in establishing links between public and private self-consciousness and competition anxiety. There is an abundance of literature describing the positive relation between heightened self-attention and various forms of anxiety (e.g., Lechner & Rosenthal, 1984; Schmitt & Kurdek, 1984; Wells, 1985). By contrast, Kim, Oh, Moon, and Kim (1999) established that private self-consciousness was negatively correlated with trait anxiety, while public self-consciousness and social anxiety were positively correlated with trait anxiety.

The detrimental effects of self-consciousness and anxiety have great relevance for sportspeople as they are constantly surrounded by conditions that can engender these mental states. Wilson and Eklund (1998) noted that, "competition is fraught with both real and imagined self-presentational risks. The potential exists in competition for athletes to convey a variety of negative images of themselves to a variety of evaluative others" (p. 83). Additionally, individuals risk being unable to obtain or fulfill personal standards and goals that they set, resulting in the perception of personal inadequacy and a potentially negative outcome that one is unable to avert. Contrastingly, if responses and perceptions are commensurate with the intended impression or goal the individual will perceive that s/he has been successful (Schlenker & Leary, 1982). The identification and effective management of emotions that can be evoked within athletic competition is an essential requirement for individuals to function successfully and it can be suggested that the understanding of these states is, to some extent, dependent on a comprehensive

knowledge of their equivalent dispositions, however research within a sporting context remains limited.

Competing Factor Structures for the Revised Self-Consciousness Scale

Generally, the 3-factor structure of the Revised Self-Consciousness Scale (rSCS: Scheier & Carver, 1985) described by Fenigstein et al. (1975) has been retained. However, equivocal findings have highlighted the potential for a distinction between two possible dimensions contributing to private self-consciousness (self-reflection - the disposition to think about the self and internal state awareness - awareness of one's inner emotional feelings and physiological states) (e.g., Martin & Debus, 1999; Watson, Morris, Ramsey, Hickman, & Waddell, 1996), and public self-consciousness (appearance consciousness - awareness of one's external appearance and style consciousness - referring to behavioral and stylistic of one's public image) (Mittal & Balasubramanian, 1987), each having opposing directions in relation to aspects of psychopathology and mental health. Therefore, it was deemed necessary to assess the factor structure prior to conducting further analyses.

Path Analysis

Based on existing theory a conceptual baseline model (Model 1; see Figure 1) was proposed to explain the relationship between the concepts. We hypothesized that social anxiety would show a positive relationship with the three factors of competition anxiety, as they are all essentially components of the same concept. Additionally, when Fenigstein et al. (1975) originally conceptualized self-consciousness, they reported that social anxiety occurred as a result of self-focus. Further research has supported this contention (Lechner & Rosenthal, 1984; Wells, 1985; Wilson & Eklund, 1998). Therefore, based on these findings we hypothesized that paths specified between the public and private self-consciousness factors and social anxiety would display a direct significant relationship. When individuals doubt that they will achieve their desired presentational goal, a discrepancy between the ideal self and actual self occurs which manifests in social anxiety (Csikszentmihalyi, 1990).

Two additional models were tested (see Figure 1). Essentially, they take the same form with the exception of two parameters. Model 2 had additional paths between style consciousness and worry, and appearance consciousness and worry (they are directly associated with a person's public self; hence, it was anticipated this would be reflected in a person's disposition to experience ruminative thoughts/worry) and model 3 had paths between style consciousness and worry, and self-reflection and worry (it can be suggested that ruminative thinking/worry is by definition linked to self-reflection - the disposition to self-ruminate).

Moderating Effects of Gender

Previous research has demonstrated that females report significantly greater symptom intensity for self-consciousness (e.g., Alanazi, 2001; Sowa & LaFleur, 1986; Wells, 1985) and trait anxiety (e.g., Jones, Swain, & Caleb, 1991; Sowa & LaFleur, 1986; Wiggins, 2001) compared to males. Further, societal demands and conditioning during human development might account for the proposed differences (Markula, 2001). Females are bombarded with images that convey notions of acceptable self-presentational styles and behaviors, creating environments in which they continually self-evaluate and experience varying degrees of social anxiety (Markula, 2001). Such perceptions are maintained across many different life domains, including sport. In this sense, females are more in tune with their emotional and physiological states and the way others perceive them (social evaluation) (Markula, 2001). In light of such findings, it was finally hypothesized that the specified model may, to some degree, be moderated by gender.

Method

Participants

Five hundred and nineteen sportspersons from southern England volunteered to participate. The sample comprised 287 males and 232 females, aged 18 to 56 years ($M = 20.22$ years, $SD = 2.85$ years). Participants were all attending weekly training sessions and competing on a regular basis. They were of club ($n = 318$), county ($n = 102$), regional ($n = 30$), national ($n = 34$), and international ($n = 35$) level and reported that they had competed at that present level for a

mean of 61.18 months (SD = 44.71 months) and had been participating in their sport in total for a mean of 115.20 months (SD = 52.17 months). Three hundred and seventy-six of the participants were involved with team sports (e.g., association football, rugby union, netball), while the remaining 143 were drawn from individual sports (e.g., track and field, swimming, tennis).

Measures

Self-consciousness. Levels of self-consciousness were assessed using the Revised Self-Consciousness Scale (rSCS: Scheier & Carver, 1985). The original factor structure assessed three dimensions of self-consciousness: Private self-consciousness, Public self-consciousness, and Social anxiety (Scheier & Carver, 1981). The rSCS comprises 22 items, rated on a 4-point Likert-type scale, anchored by 0 ("not at all like me") and 3 ("a lot like me"). Scheier and Carver (1985) reported acceptable internal consistency ($\alpha > .75$) and test-retest reliability ($r > .74$) for all subscales. However, owing to purported weaknesses in the original factor structure, researchers have reconstructed it. In most instances, reconstruction concerned the private subscale (Anderson, Bohon, & Berrigan, 1996; Burnkrant & Page, 1984; Martin & Debus, 1999), resulting in two sub-components: Self-reflection and Internal state awareness. Additionally, Mittal and Balasubramanian (1987) reconstructed the public subscale resulting in two sub-components reflecting Style consciousness and Appearance consciousness. Therefore, confirmatory factor analysis (CFA) was employed to test competing factor structures.

Competition anxiety. Competition anxiety was assessed using the Sport Anxiety Scale (SAS: Smith et al., 1990). The SAS was developed in conjunction with Smith et al.'s (1990) Conceptual Model of Sport Performance Anxiety in response to calls for a sport-specific multidimensional measure of trait anxiety (Smith et al., 1990). The 21-item questionnaire assesses three dimensions of trait anxiety: Somatic anxiety, Self-doubt/worry, and Concentration disruption. Somatic anxiety evaluates the tendency for individuals to experience anxiety-related perceptions of autonomic reactivity. The cognitive subscales of worry and concentration disruption evaluate a competitor's tendency to experience ruminative thinking and attentional

disturbances respectively (Smith et al., 1990). Items are rated on a 4-point Likert-type scale, anchored by 1 ("not at all") and 4 ("very much so"). The SAS subscales have demonstrated good internal consistency ($\alpha > .81$), relatively high test-retest reliability ($r = .85$), as well as convergent and construct validity (see Smith et al., 1990; Smith, Smoll, & Wiechman, 1998). However, the original factor structure has been questioned (Dunn, Causgrove-Dunn, Wilson, & Syrotuik, 2000). Specifically, Dunn et al. (2000) reported that, from a conceptual and empirical standpoint, a better fitting model was obtained when paths directed from items 14 and 20 originate from worry rather than concentration disruption as conceptualized originally. Additionally, given that it is a relatively new instrument, there is limited published empirical research available confirming its factor structure. Therefore, CFA was performed using the present data to assess the relative goodness-of-fit of competing factor structures.

Concentration Grid. In order to minimize the possibility of multiple questionnaire interference, that is the cognitive processes used to answer one questionnaire producing a carry-over effect to the next questionnaire (Meltzoff, 1998; Thomas & Nelson, 2001), and to maintain cognitive arousal, participants completed the Concentration Grid (CG: Harris & Harris, 1984). The CG consists of a 10 by 10 grid containing all numbers between 00 and 99 in a non-sequential order. Participants are given one minute to cross-off the numbers in ascending numerical order starting with a number that is specified at random by the researcher.

Procedure

Permission was sought from coaches to invite the sportspeople in their charge to participate in the present study. Following solicitation of informed consent, the questionnaire package was administered. The questionnaires appeared in the following order: rSCS, demographics, CG, and SAS. Administration occurred prior to a training session and the test groups ranged in size from 20-50. Once participants had completed the measures up to and including the demographic details, they had a written instruction to stop and await further instructions (the importance of this instruction was highlighted by the first author before

participants began the completion of the instruments). Having waited for all participants in the test groups to reach this point, the 1-minute period in which the CG was completed was timed by the first author, after which participants were instructed to complete the final instrument (the SAS). Participants took approximately 15 minutes to complete the package of questionnaires.

Prior to and during the testing period no reference was made to the constructs under investigation for reasons indicated by Meltzoff (1998, pp. 75-78). Participants completed the instruments in silence and without interference or distraction. The importance of providing honest and dominant responses was emphasized to participants. They were also assured that their responses would be kept in strict confidence to avoid response bias.

Data Analysis

Data analysis comprised four distinct phases. Initially, CFA was used to assess the tenability of the factor structure of the rSCS and the SAS. CFA for the present study was conducted using Bentler's (1995) EQS (v. 5.7) statistical program utilizing the maximum likelihood method and a covariance matrix. A four-index presentation strategy to evaluate the adequacy of the models both in this phase and the final phase was employed. The goodness-of-fit indexes consisted of chi-square (χ^2), Comparative Fit Index (CFI), Standardized Root Mean Squared Residual (SRMR), Root Mean Square of Approximation (RMSEA) and Akaike Information Criterion (AIC) representing both absolute and incremental fit indexes. Cut-off values close to .95 for CFI, .08 for SRMR, and .06 for RMSEA are considered acceptable (Hu & Bentler, 1999), whereas AIC adjusts model chi-square to penalize for model complexity and the lowest AIC value represents the best fitting model. Owing to variations in the performance of fit indexes relative to sample size and distributional misspecification, it has been suggested that a multiple index strategy including both absolute and incremental indexes is a better way to distinguish good fitting models from poor ones including those with misspecified factor covariance(s), factor loading(s), or both (Hu & Bentler, 1999).

In the second phase, the distributional properties of the dependent variables were assessed.

Path analysis utilizing EQS was adopted in the third phase to examine the relationship between self-consciousness and competition anxiety based on the a priori models. Finally, in the fourth phase, multigroup analysis was conducted, imposing increasingly stricter equality constraints on parameters to examine whether the model was generalizable or invariant across gender groups.

<div align="center">Results</div>

Distribution of the Data

Multivariate normality is an assumption that underlies the use of statistical modeling; therefore, it was assessed using Mardia's coefficient of multivariate kurtosis (Mardia, 1970). Analysis using EQS revealed that the data violated the multivariate normality assumption (multivariate kurtosis normalized estimate = 9.73); therefore, robust maximum likelihood estimation was employed in CFA to account for the violation. Univariate kurtosis values ranged from –0.33 to –1.07 (*M* kurtosis value = -0.61, *SD* = 0.20).

CFA of the Factor Structures of the rSCS and SAS

Robust maximum likelihood CFAs were conducted using EQS (Bentler, 1995) to test the comparative fit of the a priori factor structures of the original model of the rSCS proposed by Scheier and Carver (1985; rSCS 1) and alternative models proposed by Anderson et al. (1996; rSCS 2), Burnkrant and Page (1984; rSCS 3), Martin and Debus (1999; rSCS 4), and Mittal and Balasubramanian (1987; rSCS 5). Dunn et al. (2000) indicated that the purpose of specifying alternative models is to provide the researcher with an opportunity to compare model goodness-of-fit indexes to determine which model provides the best fit to the data. Although in all cases (other than the factor structure of rSCS 4), the goodness-of-fit indexes of alternative models were superior to those of the original model (see Table 1) it is acknowledged that they did not meet traditional fit criteria. However, each subscale is modeled as a distinct construct and it was not the purpose of the study to restructure the rSCS; therefore, for the purpose of carrying out further analyses, the best fitting model was used. Based primarily on CFI and AIC, the 5-factor structure proposed by Mittal and Balasubramanian (1987; rSCS 5) was adopted.

The values of standardized loadings ranged from .44 to .81 with an average value of .62, which exceeds the accepted minimum single loading of .40 (Ford, MacCallum, & Tait, 1986). In addition, the reliability of individual items and the composite reliabilities of subscales were calculated using Bagozzi's (1981) reliability equations. Item reliability ranged from .18 to .49, and the reliability of the composite factors was .60 (self- reflection), .49 (internal state awareness), .66 (style consciousness), .71 (appearance consciousness), and .75 (social anxiety). Cronbach (1951) alpha values for the five subscales were .64 (self-reflection), .53 (internal state awareness), .78 (style consciousness), .77 (appearance consciousness), and .79 (social anxiety).

CFA was repeated for the original factor structure of the SAS proposed by Smith et al. (1990; SAS 1) and the alternative factor structure proposed by Dunn et al. (2000; SAS 2). Again, based primarily on the CFI and AIC, the alternative model displayed superior fit, and was therefore adopted for further analysis. The values of the standardized loadings ranged from .52 to .93 with an average value of .71; thus, the loadings exceeded the accepted minimum of .40 (Ford et al., 1986). Reliability values (Bagozzi, 1981) were also calculated for the SAS; item reliability ranged from .24 to .71 and reliability values of the factors were .88 (somatic anxiety), .85 (worry), and .72 (concentration disruption). Cronbach (1951) alpha values for the three subscales were .91 (somatic anxiety), .89 (worry), and .76 (concentration disruption).

In order to establish whether there was a significant difference between genders, and by extension, the viability of gender as a moderator variable, a one-way between-groups MANOVA was performed. A main effect for gender was found (Hotteling's $T = .13$, $F_{8, 435} = 7.06$, $p < .001$, $\eta^2 = .12$). Step-down F tests revealed significant differences between style consciousness, social anxiety, somatic anxiety, concentration disruption, and worry (see Table 2). Although not every factor was were significant, we decided to examine the possible moderating effect of gender, as the mediating factor of social anxiety and all other anxiety factors were significantly different.

Path Analysis

To examine the pattern of associations between the subscales of self-consciousness and competition anxiety, path analysis using the robust maximum likelihood method was employed to test the a priori models. Examination of the overall fit indexes demonstrated that the fit of all models was very good (see Table 3). In the cases of both M_2 and M_3, standardized solutions revealed the specified path between style consciousness and worry was very weak (.08 and .07 respectively), additionally, the Wald test indicated that the specified paths between appearance consciousness and worry (M_2), and self-reflection and worry (M_3) should be dropped to improve the parsimony of models. Therefore, on this basis, the baseline model (M_1) was accepted for further analysis (see Figure 2). Z-test scores revealed that all paths were significant with the exception of the path between self-reflection and social anxiety.

In order for the model to be generalizable, it should demonstrate similar properties across populations. If models do differ significantly, this highlights important implications regarding coaching techniques and intervention strategies employed for different groups of individuals. Therefore, given the nature of previous findings (e.g., Alanazi, 2001, Larry, 2000, Markula, 2001), the specified model was assessed for moderating effects of gender. Table 3 presents values of goodness-of-fit for the male (M_{men}) and female (M_{female}) samples. Results revealed that both data sets showed good fit.

Although the specified model showed a good fit to the data sets, results should not be viewed as implying that the same parameter values adequately describe the responses of both genders (Li, Harmer, & Acock, 1996). Having established that there might be invariance across gender, multigroup analyses were conducted imposing equality constraints firstly on the paths (M_{paths}) and secondly on the paths and errors ($M_{paths+ errors}$). Table 3 summarizes the results of the constrained models. There are two important suppositions underlying this analysis. First, as a general rule, multigroup model analysis has larger χ^2 values and second, multigroup analysis does not produce a better fitting model compared to any single group model owing to the fact that if

one sample had a poorer fit than the other this would lead to a discrepancy in the fit of the multigroup model (Manolis, Winsor, & True, 1999).

As previously mentioned, the inflated χ^2 in Table 3 was expected. Having looked at the Lagrange multiplier test it was identified that χ^2 could be reduced by releasing the path between social anxiety and somatic anxiety owing to the tendency for the path to be stronger in one of the groups. A review of the single-sample models revealed that this path was stronger for women compared to men. In addition, following the $M_{paths \ +errors}$ analysis, the Lagrange multiplier test indicated that χ^2 could be improved if the error constraint on somatic anxiety was released. This was expected given the variation in path strength highlighted above. Finally, the path between social anxiety and style consciousness was also highlighted as a weak path; however, as it was not evident in previous analyses, it is reasonable to speculate that it could be attributed to random error.

Discussion

The main purpose of the present study was to specify an a priori path model representing the relationship between self-consciousness and competition anxiety. Additionally, the potential moderating effect of gender on the path model was explored. Specifically, it was hypothesized that the dimensions of self-consciousness would predict trait anxiety via the mediator of social anxiety and that this relationship would be moderated by gender.

Relationship Between Self-Consciousness and Competition Anxiety

Specification of the path model highlighted several interesting issues. As hypothesized, all factors of self-consciousness were related to competition anxiety through the mediator of social anxiety. This supports the initial work by Fenigstein et al. (1975) and more recent work, in that concerns with self-presentation can result in social anxiety (Wilson & Eklund, 1998), and that self-consciousness plays a significant role in the development of anxiety (e.g., Gibbons, 1990). Moreover, social anxiety is a dimension of the anxiety concept, so it is tenable that a relationship was present with the other dimensions of anxiety.

As evident in Figure 2, a stronger path exists between social anxiety and the cognitive anxiety factor of worry when compared to its link with the somatic anxiety factor. This may be so because, by definition, cognitive anxiety is "known to the individual" whereas sources of somatic anxiety are not necessarily known; feeling anxious does not necessitate or entail the recognition of a source (Wilson & Eklund, 1998) and may just "be elicited by conditioned responses to non-evaluative environmental stimuli" (Wilson & Eklund, 1998, p. 94). Thus, supporting the contention that there are potentially different antecedents for the subcomponents of anxiety (Lane, Terry, & Karageorghis, 1995; Parfitt, Jones, & Hardy, 1990)

The conceptualization of two subcomponents of private self-consciousness and the relationship they display with social anxiety support contentions that internal state awareness and self-reflection are differentially related to forms of psychological dysfunction (Anderson et al., 1996), specifically, internal state awareness displays relative adjustment while self-reflection displays relative maladjustment with social anxiety. The components of public self-consciousness are also differentially related to psychological dysfunction. It is conceivable that this differentiation highlights why previous researchers (e.g., Kim et al., 1999; Ingram, 1990) have reported contradictory evidence. Thus, future research should ensure that a distinction is made between subcomponents of self-consciousness in order for the true relationships and mechanisms underlying the relationship between self-focused attention and psychopathology to be established.

Negative correlations between internal state awareness, appearance consciousness, and social anxiety although small, have practical implications insofar as enhancing these factors may be associated with lower social anxiety. In terms of internal state awareness, if a sportsperson is aware of their emotions and physiological state they may be able to monitor and control their focus of attention with effective intervention strategies, thus promoting their motivational tendencies and minimizing the extent to which they experience negative affect. In a similar manner, an awareness of one's appearance may cause distraction from other potentially harmful stimuli; focusing on the way one looks and improving appearance may help promote positive

feelings and consequently diminish negative environmental effects. Therefore, they could be considered as adaptive means of attending to the self.

Owing to the small parameter estimates, the above recommendations should be viewed with caution. The small parameter values can be attributed to the relatively poor reliability estimates obtained for the present data; specifically, Cronbach's alpha for the rSCS subscales of self-reflection (.64) and internal state awareness (.53) subscales are below the recommended lower threshold of .7 (Nunnally, 1978), while the remaining subscales display Cronbach alpha values just above this level. Therefore, it can be recommended that further research is required to examine the internal consistency of the subscales. The insignificant path between self-reflection and social anxiety could be attributed to global judgments made about the self. Self-rumination leaves individuals vulnerable to psychopathological symptoms (e.g., depression), as it fails to provide feedback about potentially remediable aspects of the self (Martin & Debus, 1999). Therefore, the impact that it has on the degree to which one experiences social anxiety may be minimal, and is reflected in the small parameters.

Consistent with previous research (e.g., Alanazi, 2001; Gould et al., 1983; Jones et al., 1991; Larry, 2000; Wells, 1985), descriptive statistics indicated that women were dispositionally more self-focused than men, and reported higher levels of trait anxiety. Significant differences were found between all aspects of anxiety as well as style consciousness. With partial eta squared effect sizes ranging from .01 to .05, it can be tentatively suggested that some females are more concerned with behavioral and stylistic elements of their public image compared to males. Thus, providing some support for the contentions of Martin and Debus (1999) regarding the negative association between self-focus and an individual's perception of themselves and their behavior in the presence of others. Consequently, it can be argued that for situations in which the self becomes perceptually salient, deviations in the environment may be more readily perceived by females, resulting in higher levels of competition anxiety when compared to males. Interestingly, these differences did not represent significant invariance when multigroup analysis was

conducted across gender. Therefore, it can be suggested that, in a sport context, both genders are equally vulnerable to cognitive distraction. Moran (1996) asserted that in the sporting environment, the presence of external stimuli can exaggerate performers' sensitivity to their internal mental state and internal mental processes often present a greater challenge than overcoming external distractions. Jackson (1995) has reported that thinking excessively about oneself and/or about what might happen in the future can inhibit performance.

In contrast to these negative perceptions, it must be recognized that concerns about the self and performance can also be associated with an appropriate mental focus for competition e.g., athletes can interpret anxiety as being facilitative. Loehr (1986) stated that a balance needs to be struck and that individuals need to manage their emotions effectively in order to facilitate optimal performance. Based on the empirical evidence presented herein, practitioners should consider employing strategies that help control the degree to which individuals focus on themselves. Additionally, by enhancing the protective strategies that act as buffers between the ego and the environment it may, in turn, help to reduce or eliminate the debilitating effect of emotions such as self-consciousness and anxiety, or even promote the feelings as facilitative (Gibbons, 1990).

Factor Structure of the rSCS

The tenability of the rSCS factor structure was examined. It is recognized as a limitation of the present study that the fit indexes showed only marginally acceptable fit. However, the present study did not set out to re-design the rSCS but to propose and investigate the previously equivocal relationship between self-consciousness and competition anxiety. Therefore, path analyses commenced using the best fitting model indicated by the present data (the 5-factor model by Mittal & Balasubramanian, 1987). It is recommended that future research investigates and re-addresses the competing factor structures of the rSCS and assesses the environmental conditions that may differentially or even independently activate aspects of the multidimensional concept (Nasby, 1996).

Factor Structure of the SAS

CFA demonstrated that the data could be best explained by the 3-factor measurement model proposed by Dunn et al. (2000). They supported Smith et al.'s (1990) contention that the SAS is a multidimensional measure assessing three dimensions of trait anxiety; however, their perception and formulation of the worry and concentration disruption subscales was slightly different. Present results reinforce the findings of Dunn et al. (2000) thus it can be recommended that when utilizing relatively new psychometric measures it is beneficial to assess their psychometric properties, and confirm their factor structure (Gorsuch, 1983).

Conclusions

The present study demonstrated that, in support of the a priori model, self-reported levels of self-consciousness displayed a positive relationship with trait anxiety via the mediator of social anxiety. Future research should attempt to further explore the complex relationship between the constructs, and the various mechanisms within the sporting environment that may impact on this relationship. With reference to the moderating effects of gender, the research hypothesis was rejected. However, differences in the socialization of males and females could be examined to identify exactly which factors trigger greater self-presentational concerns and anxiety symptoms among females. The understanding of such mechanisms may help to facilitate the structure of counseling, the design of interventions and the organization of practice environments to assist in maximizing the control an athlete has over his or her pre-competition mental state. Additionally, further tests of the factor structure and more rigorous validation of the measures employed appears warranted in light of the numerous empirical issues highlighted in the present study. Finally, a replication of the study in a physical education context may further understanding of the self-presentational concerns experienced by pupils and the subsequent anxiety they may feel during physical education classes. Such work could have long-term implications for pupils' choice to participate in sport and physical activity.

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Table 1

Goodness-of-fit Indexes for the Competing Factor Models of the rSCS and SAS

Model	χ^2	CFI	SRMR	RMSEA	AIC
rSCS 1	746.34 (206)*	.82	.08	.08	334.34
rSCS 2	628.77 (164)*	.84	.08	.08	300.77
rSCS 3	665.73 (183)*	.83	.08	.08	299.72
rSCS 4	3057.14 (267)*	.18	.21	.15	2523.14
rSCS 5	550.68 (160)*	.86	.07	.07	230.68
SAS 1	770.82 (186)*	.88	.09	.08	398.82
SAS 2	660.49 (186)*	.90	.06	.07	288.49

Note. χ^2 degrees of freedom are shown in brackets after the test statistic.

p < .001.

Table 2

Descriptive Statistics for the rSCS (Mittal & Balasubramanian, 1987) and SAS (Dunn et al. 2000) Factors and ANOVA for Gender Differences

Variable	Male		Female		All participants		F (1, 422)	Partial η^2
	M	*SD*	*M*	*SD*	*M*	*SD*		
SR	5.73	2.37	5.48	2.24	5.61	2.31	1.30	.00
ISA	5.26	1.66	5.46	1.66	5.36	1.63	1.60	.00
STC	7.08	2.52	7.66	2.41	7.35	2.48	6.01*	.01
AC	5.71	2.04	6.05	2.05	5.87	2.05	3.28	.01
SA	8.01	3.91	9.84	3.74	8.86	3.94	25.28*	.05
SomA	18.17	5.39	21.05	6.29	19.50	5.99	26.96*	.06
W	19.27	5.66	21.30	5.32	16.49	4.62	14.96*	.03
CD	5.25	2.08	5.72	1.98	9.19	2.99	5.91*	.01

Note. SR = Self-Reflection; ISA = Internal State Awareness; STC = Style Consciousness; AC = Appearance Consciousness; SA = Social Anxiety; SomA = Somatic Anxiety; W = Worry; CD = Concentration Disruption.

*p < .05.

Table 3

Goodness-of-Fit Indexes for the a priori Models, the Specified Single Group Models, and for the Tests of Invariance Across Gender

Model	χ^2	CFI	SRMR	RMSEA	AIC
M_1	31.05 (12)**	.98	.06	.06	7.05
M_2	25.28 (10)**	.98	.05	.06	5.28
M_3	25.03 (10)**	.98	.05	.06	5.03
M_{men}	16.47 (12)	.98	.07	.06	-7.53
M_{female}	12.97 (12)	.99	.09	.03	-11.03
M_{paths}	38.43 (30)	.98	.08	.04	-21.58
$M_{paths + errors}$	54.56 (38)*	.96	.10	.05	-21.44

Note. M_1 = Figure 1, Model 1; M_2 = Figure 1, Model 2; M_3 = Figure 1, Model 3.

χ^2 degrees of freedom are shown in brackets after the test statistic.
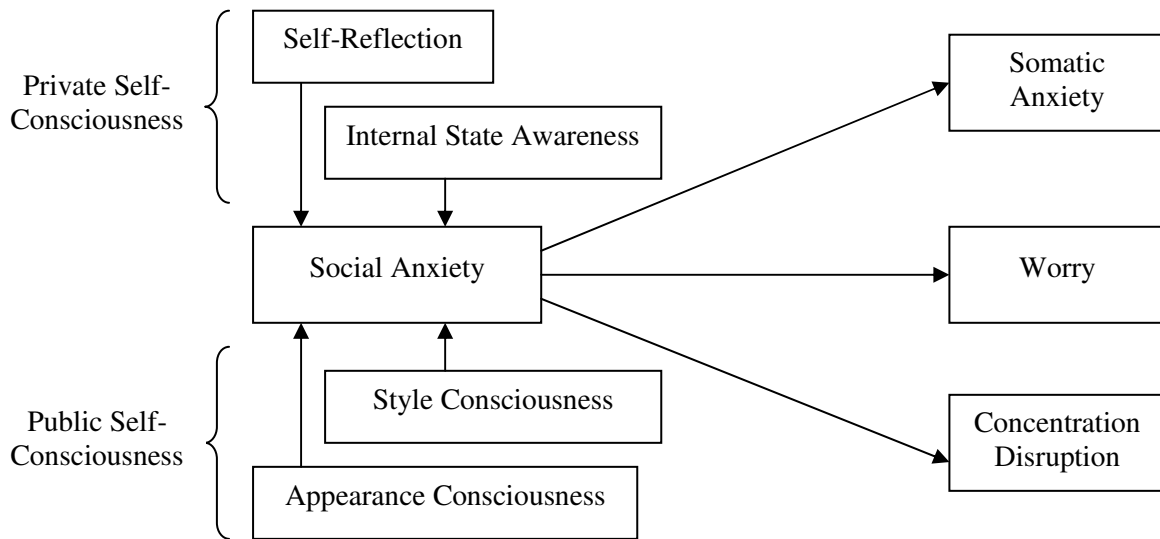
p < .05. **p* < .01.

Figure Captions

Figure 1. Hypothesized conceptual path models representing relationships between self-consciousness and competition anxiety.
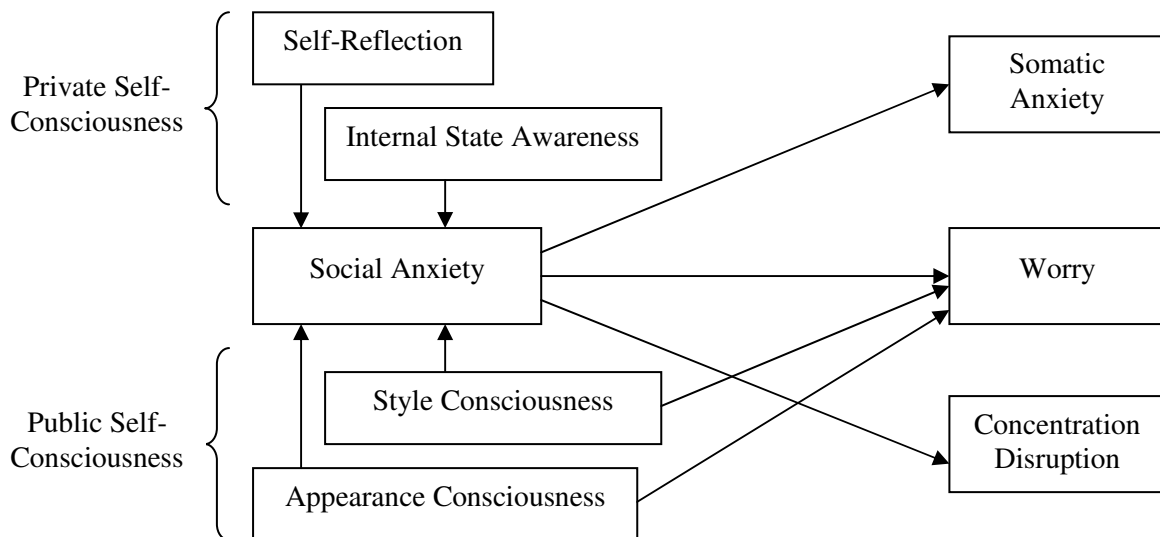

Figure 2. Path model representing relationships between self-consciousness and competition anxiety. All parameters are standardized. The magnitude of parameters is indicated by the structural coefficient (shown beside arrows) and all are significant ($p < .001$) apart from the path between self-reflection and social anxiety.

Note. Residual correlations were as follows: Somatic Anxiety, Worry = .59; Social Anxiety, Concentration Disruption = .16; Worry, Concentration Disruption = .39.

Model 1

Model 2

Model 3