



# The relationship between psychological skills usage and competitive anxiety responses

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## Abstract

**Objectives.** To investigate equivocal findings within the literature addressing the relationship between competitive anxiety responses and psychological skills. Intensity (i.e. level) and direction (i.e. interpretation of intensity as facilitative or debilitating) dimensions of competitive state anxiety and self-confidence were examined in performers with different levels of psychological skills usage.

**Design.** Cross-sectional design assessing psychological constructs during competition. The independent variable was psychological skill usage (“high” and “low” groups) and dependent variables were competitive anxiety responses.

**Method.** Non-elite competitive swimmers ( $N=114$ ) completed a modified version of the Competitive State Anxiety Inventory-2 (CSAI-2) which examined both intensity and direction dimensions prior to racing. Following the event these participants completed the Test of Performance Strategies (TOPS) which measures psychological skills usage. Based on the TOPS scores the swimmers were dichotomised using post-hoc median-split into high and low usage groups for certain psychological skills.

**Results.** MANOVAs revealed significant differences in the CSAI-2 scores between the high and low usage groups for the skills of relaxation, self-talk and imagery. ANOVAs indicated significant differences on all CSAI-2 subscales for relaxation groups, and differences on cognitive intensity, somatic direction and self-confidence for self-talk groups, and self-confidence for the imagery groups.

**Conclusions.** Non-elite swimmers, in contrast with previous research examining elite swimmers (Hanton, S. & Jones, G. (1999a). The acquisition and development of cognitive skills and strategies: I. Making the butterflies fly in formation. *The Sport Psychologist*, 13, 1–21), primarily use relaxation strategies to reduce and interpret their anxiety intensity levels as facilitative, relying minimally on other psychological skills. © 2001 Elsevier Science Ltd. All rights reserved.

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Recent research within multidimensional competitive anxiety has disputed the supposition that anxiety is always negative and detrimental to performance. In two pivotal review papers, Jones (1991, 1995) introduced the notion of “direction” as a result of dissatisfaction with the “intensity alone” approach adopted in typical uses of the Competitive State Anxiety Inventory-2 (CSAI-2; Martens, Burton, Vealey, Bump & Smith, 1990). Specifically, the CSAI-2 measures only the level (i.e. intensity) of pre-competitive cognitive anxiety and perceived physiological symptoms and fails to take into account the individual’s interpretation of these symptoms as to whether they have a positive or negative effect on performance (i.e. direction). These observations led to the development of a modified version of the CSAI-2, which measures both the intensity of these symptoms on the original scale, and the direction on a bipolar scale ranging from debilitating to facilitative (Jones & Swain, 1992). These conceptual developments provided the incentive for a research programme by Jones, Swain, Hanton and colleagues who have successfully identified several individual difference variables including: competitiveness (Jones & Swain, 1992), performance (Jones, Swain & Hardy, 1993), skill level (Jones, Hanton & Swain, 1994; Jones & Swain, 1995), and goal attainment expectancy (Jones & Hanton, 1996). Direction of anxiety has also been investigated regarding the influence of affect (Jones, Swain & Harwood, 1996), the antecedents and temporal patterning of the anxiety response (Hanton & Jones, 1997; Wiggins, 1998), locus of control beliefs (Ntoumanis & Jones, 1998), trait anxiety as a function of gender and skill (Perry & Williams, 1998), and the nature of the sport (Hanton, Jones & Mullen, 2000).

The findings of Jones et al. (1993, 1994) and Jones and Swain (1995) are particularly relevant in the context of the present investigation. In these studies, good, elite and superior skilled performers interpreted the intensity of their symptoms as more facilitative than the poor, non-elite and inferior skilled performers in competition, despite no differences in levels of anxiety intensity. They also reported higher levels of self-confidence. These findings provided a rationale to investigate the mechanisms via which facilitative interpretations have been learned and developed by better performers and, importantly within the context of this study, the influence of different psychological skills on the competitive anxiety response.

Four lines of enquiry have examined the psychological skills that are important in moderating the intensity and direction of pre-competitive anxiety symptoms. First, Maynard and colleagues (1995) conducted two intervention studies examining the effects of various anxiety reduction techniques on soccer players debilitated by anxiety symptoms (Maynard, Hemmings & Warwick-Evans, 1995; Maynard, Smith & Warwick-Evans, 1995). The results indicated that a reduction in anxiety intensity levels via relaxation techniques was associated with more facilitative interpretations of pre-competitive symptoms and higher self-confidence. Second, Jones and Hanton (1996) demonstrated that competitive swimmers with positive expectations of goal achievement reported their anxiety symptoms, both cognitive and somatic, as being more facilitative than those who had negative goal expectations. Third, soccer players have experienced lower anxiety levels, more facilitative interpretations and greater self-confidence in response to “challenge” imagery situations as opposed to “pressure” situations (Hale & Whitehouse, 1998). Fourth, recent research by Hanton and Jones (1999a), using a different methodological approach, employed interviews to examine the acquisition of cognitive skills and strategies that enable elite swimmers to interpret pre-race symptoms as facilitative. Inductive procedures revealed that as the swimmers progressed in standard they developed, and followed, refined pre-competition and pre-race routines. Specifi-

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